SLV-E80AP/B/IT/NC/NP/UX/UY/VP

RMT-V141A/V142A/V146A/V146D

SERVICE MANUAL

AEP Model
SLV-E80AP

French Model
SLV-E80B

Italian Model
SLV-E80IT

North European Model
SLV-E80NC

Spanish Model
SLV-E80NP

UK Model
SLV-E80UX/UY

Germany Model
SLV-E80VP

- **Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT II for MECHANICAL ADJUSTMENTS. (9-972-816-11)**

VHS Hi-Fi

SPECIFICATIONS

System

Channel coverage
AP, IT, NC, NP, VP :
PAL :
VHF E2-E-12
CATV S01-S03, S1-S20
HYPER S21-S41
UHF E21-E69

B :
SECAM:
VHF F2-F10
CATV C1-C23
HYPER C24-C44
UHF F21-E69
PAL :
VHF E2-E-12
CATV S01-S03, S1-S20
HYPER S21-S41
UHF E21-E69

UX, UY :
UHF B21-B69

RF output signal
UHF channels 30 – 39

Aerial out
75-ohm asymmetrical aerial socket

Inputs and outputs

EURO-AV (LINE 1)
CANAL+ (B, UY)
21-pin
Video input: pin 20
Audio input: pins 2 and 6
Video output: pin 19
Audio output: pins 1 and 3

LINE IN 2
VIDEO IN, Phono jack (1)
Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
AUDIO IN, Phono jack (1)
Input level: –7.5 dBs (0 dBs = 0.775 Vrms)
Input impedance: more than 47 kilohms

EURO-AV (LINE 3) (UX, UY)
21-pin
Video input: pin 20
Audio input: pins 2 and 6
Video output: pin 19
Audio output: pins 1 and 3

AUDIO OUT
Phono jack (1)
Rated output level: –7.5 dBs
Load impedance: 47 kilohms
Output impedance: less than 10 kilohms

General

Power requirements
220 – 240 V AC, 50 Hz

Power consumption
25 W

Operating temperature
5°C to 40°C

Storage temperature
–20°C to 60°C

– Continued on next page –

MICROFILM

VIDEO CASSETTE RECORDER

SONY®

Dimensions

Approx. 430 × 100 × 375 mm
(w/h/d)
including projecting parts and
controls

Weight

Approx. 5.2 kg

Supplied accessories

Remote commander (1)
R6 (size AA) batteries (2)
Aerial cable (1)
Audio cable (1)
Mains lead (1)
RF screwdriver (1)

Design and specifications are subject to change without notice.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

Section *Title* *Page*

1. GENERAL

Index to Parts and Controls ··· 1-1
Getting Started ··· 1-2
Basic Operations ··· 1-8
Additional Operations ··· 1-14
Editing ··· 1-17

2. DISASSEMBLY

2-1. Front Panel Assembly and Case ··· 2-1
2-2. Control Switch Block ··· 2-1
2-3. MF-242 and PL-24 Boards ··· 2-2
2-4. MF-243 Board ··· 2-2
2-5. Cassette Compartment Assembly ··· 2-3
2-6. RV-33 Board and MD Assembly ··· 2-3
2-7. IO-50 Board ··· 2-4
2-8. PT-96 and CG-20 Boards ··· 2-4
2-9. MA-181 and HF-34 Boards ··· 2-5
2-10. Internal Views ··· 2-6
2-11. Circuit Boards Location ··· 2-7

3. BLOCK DIAGRAMS

3-1. Overall Block Diagram ··· 3-1
3-2. Video Block Diagram-1 ··· 3-4
3-3. Video Block Diagram-2 ··· 3-7
3-4. Servo, System Control Block Diagram ··· 3-10
3-5. Audio Block Diagram ··· 3-13
3-6. Tuner Block Diagram-1 ··· 3-16
3-7. Tuner Block Diagram-2 ··· 3-19
3-8. Timer, Mode Control Block Diagram ··· 3-23
3-9. Power Supply Block Diagram ··· 3-25

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. Frame Schematic Diagram ··· 4-1
4-2. Printed Wiring Boards and Schematic Diagrams ··· 4-4
  RV-33 Board ··· 4-4
  MA-181, MF-243, DD-61 Boards ··· 4-11
  PT-96 Board ··· 4-20
  MF-242, PL-24 Boards ··· 4-28
  HF-34 Board ··· 4-31
  IO-50 Boards ··· 4-35
  TU-146 Board ··· 4-39
  CG-20, CP-65, PD-37, VP-39 Boards ··· 4-43
4-3. Semiconductors ··· 4-47

5. REPAIR PARTS LIST

5-1. Exploded Views ··· 5-1
  5-1-1. Front Panel and Cabinet Assemblies ··· 5-1
  5-1-2. Chassis Assembly ··· 5-2
  5-1-3. FL Cassette Compartment Assembly ··· 5-3
  5-1-4. Mechanism Chassis Assembly (1) ··· 5-4
  5-1-5. Mechanism Chassis Assembly (2) ··· 5-5
  5-1-6. Mechanism Chassis Assembly (3) ··· 5-6
5-2. Electrical Parts List ··· 5-7
  Hardware List ··· 5-27

Section *Title* *Page*

6. INTERFACE, IC PIN FUNCTION DESCRIPTION

6-1. System Control – Video Block Interface ··· 6-1
6-2. System Control – Servo Peripheral Circuit Interface ··· 6-2
6-3. System Control – Mechanism Block Interface ··· 6-3
6-4. System Control – System Control Circuit Interface ··· 6-4
6-5. System Control – Audio Block Interface ··· 6-4
6-6. System Control and RF Modulator – Input Selection Block Interface ··· 6-4
6-7. Servo/System Control Microprocessor Pin Function ··· 6-5
6-8. Timer, Tuner, Mode Control Microprocessor Pin Function ··· 6-6

7. ADJUSTMENTS

7-1. Mechanical Adjustments ··· 7-1
7-2. Electrical Adjustments ··· 7-1
  2-1. Pre-Adjustment Preparations ··· 7-1
    2-1-1. Instruments to be Used ··· 7-1
    2-1-2. Connection ··· 7-1
    2-1-3. Set-up of Adjustment ··· 7-1
    2-1-4. Alignment Tape ··· 7-1
    2-1-5. Specified I/O Level and Impedance ··· 7-2
    2-1-6. Adjusting Sequence ··· 7-2
  2-2. Power Supply Check ··· 7-2
  2-3. Servo/Video System Adjustments ··· 7-2
    2-3-1. Switching Position Adjustment ··· 7-3
    2-3-2. Sync. AGC Adjustment ··· 7-3
    2-3-3. White Clip Adjustment ··· 7-3
    2-3-4. Recording Chroma Adjustment ··· 7-4
    2-3-5. Playback Level Adjustment ··· 7-4
    2-3-6. Carrier Deviation Adjustment ··· 7-4
    2-3-7. VCO Adjustment ··· 7-5
    2-3-8. SECAM Discrimination Adjustment ··· 7-5
  2-4. Audio System Adjustments ··· 7-5
    2-4-1. Hi-Fi Audio System Adjustment ··· 7-5
    2-4-2. Normal Audio System Adjustment ··· 7-7
  2-5. Tuner System Adjustments ··· 7-7
    2-5-1. Receive Separation Adjustment ··· 7-7
  2-6. Parts Arrangement Diagram for Adjustments ··· 7-7

SERVICE NOTE

1. RETURNING PINCH ROLLER, GUIDE ROLLER AND ELEVATOR CAM TO STOP CONDITION

1) Remove the bottom panel.
2) Turn the worm gear Ⓐ of the cam motor, located at lower of the MD, to the arrow direction Ⓑ by finger.

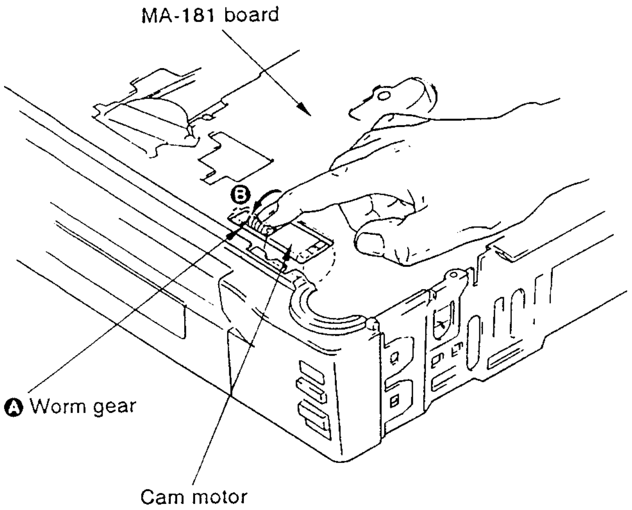

MA-181 board
Ⓑ
Ⓐ Worm gear
Cam motor

Fig. 1.

2. WINDING TAPE TO CASSETTE HALF

Turn the flywheel Ⓐ of the capstan motor to the arrow direction Ⓑ by finger, then the cassette tape will be wound to the cassette half.

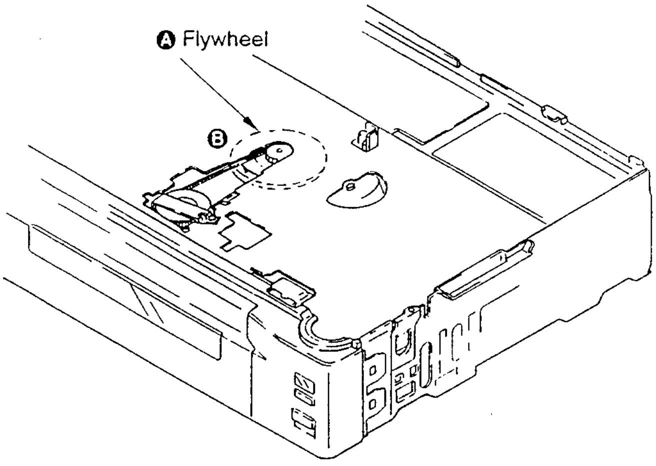


Fig. 2.

3. TAKING OUT CASSETTE WHEN UNIT IS DEFECTIVE WITH CASSETTE IN

1) Remove the upper case.
2) Turn the worm gear Ⓐ of the FL cassette compartment motor to the arrow direction Ⓑ by finger.

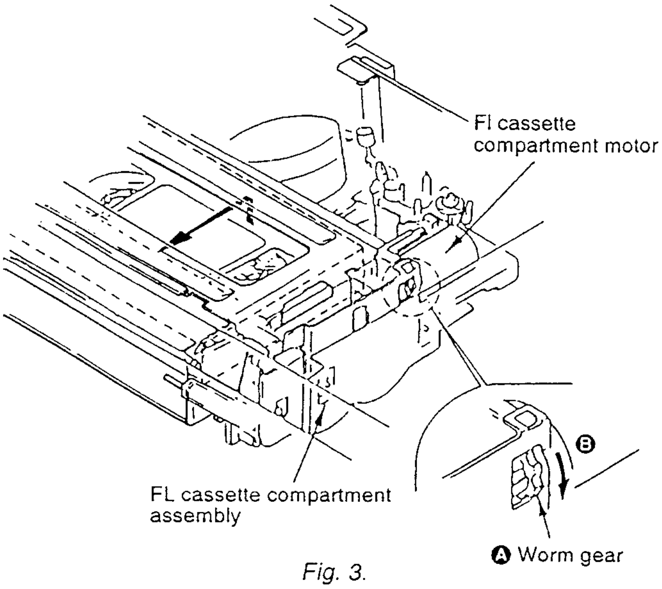

Fl cassette compartment motor
FL cassette compartment assembly
Ⓑ
Ⓐ Worm gear

Fig. 3.

Note: When performing 1. to 3., be careful not to clog and damage the cassette tape.

4. UPPER DRUM REPLACEMENT

4-1. Removal of Upper Drum

1) Remove the screw ❶ (+P3 × 6) and take out the grounding shaft ❷. (See Fig. 4.)
2) Completely remove the rotary upper drum board and desolder the soldering indicated by the arrows.
3) Remove two screw ❸ (PSW3 × 8) and take out the rotary upper drum in the arrow direction Ⓐ. (See Fig. 5.)
   If it difficult, remove by shaking the rotary upper drum gradually.

Note: If the drum can not be removed, check wheater the solders have been removed or not again.

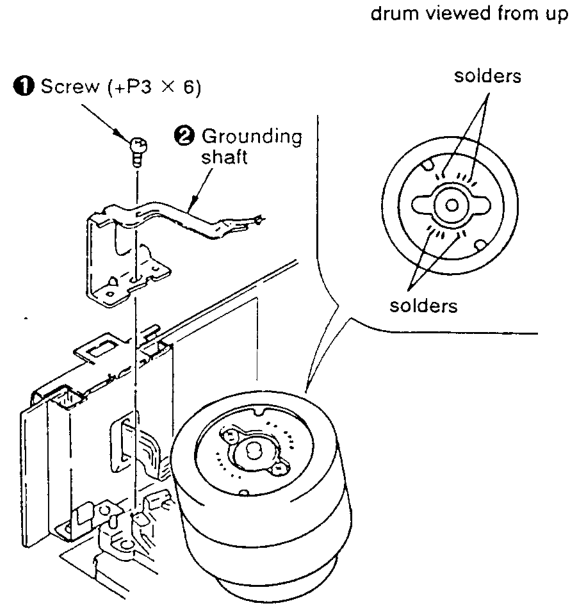

drum viewed from up
solders
❶ Screw (+P3 × 6)
❷ Grounding shaft
solders

Fig. 4.

4-2. Mounting Upper Drum

1) When inserting the rotary drum into the lower drum, be careful not to blur the contacting surface with fingerprint or the like.
2) Mount the rotaly upper drum board by aligning marked ➡ with marked ⇄ of rotary transformer board (lower drum) so that the screw holes of both upper and lower drums match. (See Fig. 5.)
3) If it is difficult, mount the upper drum by shaking it gradually.
   Note: Be careful not to damage the head. Make sure that the upper drum is tightly inserted.
4) Tighten two screws ❸ (PSW3 × 8). (See Fig. 5.)
   Note: Temporary tighten two screws. After making sure that upper drum is tightly inserted, tighten the screws.
5) Solder points on the board of the rotary upper drum.
6) Fix the grounding shaft ❷ using the screw ❶ (+P3 × 6) so that the protrusin of grounding shaft end contacts the center of the drum shaft.
   Note: When attaching the grounding shaft ❷, be careful not to apply force to the spring section of it.

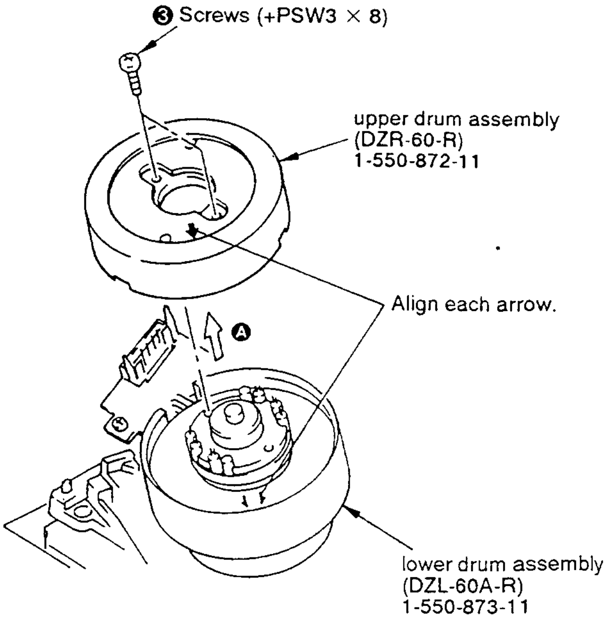

❸ Screws (+PSW3 × 8)
upper drum assembly
(DZR-60-R)
1-550-872-11
Align each arrow.
Ⓐ
lower drum assembly
(DZL-60A-R)
1-550-873-11

Fig. 5.

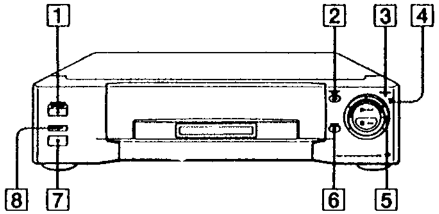
SECTION 1
GENERAL

This section is extracted from SLV-E80 UX/ UY instruction manual.

Index to parts and controls

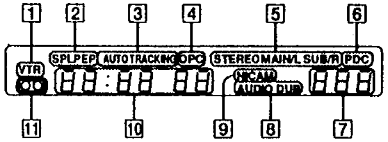
Refer to the pages indicated in ( ) for details.

Front panel, with cover closed



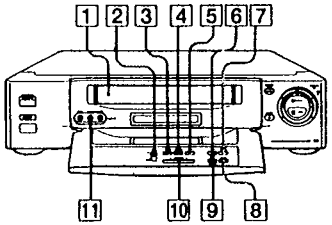
1 ON/STANDBY switch/indicator
2 ◀◀◀ HI-SPEED REW button (16)
3 TIMER REC (recording) indicator (19)
4 REC (recording) indicator
5 DUAL MODE SHUTTLE ring (16)
6 ❚❚ PAUSE button (16)
7 Remote sensor (6)
8 ≙ EJECT button (16)

Display window



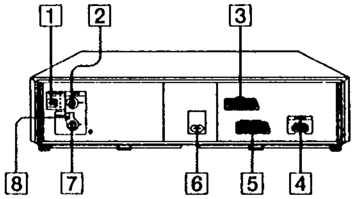
1 VTR indicator (20)
2 Tape speed indicators (19)
3 AUTO TRACKING indicator (31)
4 OPC indicator (31)
5 Sound indicators (20)
6 PDC indicator *(SLV-E80UX only)* (24)
7 Line/Programme position indicator
8 AUDIO DUB indicator (36)
9 NICAM indicator (20)
10 Linear time counter/Clock (11, 17)
11 Tape indicator

Front panel, with cover opened



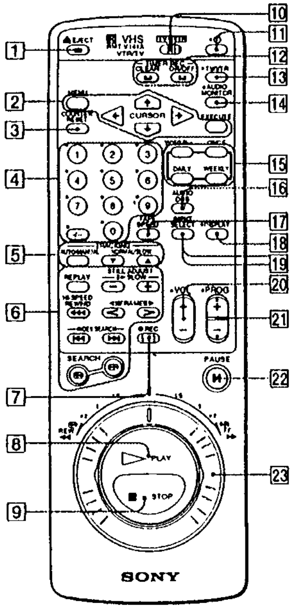
1 Tape compartment
2 EDIT switch (35)
3 TV/VTR button (20)
4 INPUT SELECT button (8)
5 PDC button *(SLV-E80UX only)* (24)
6 OPC button (31)
7 QUICK TIMER button (19)
8 ● REC button (18)
9 TIMER REC ON/OFF button (19)
10 PROGRAM buttons (8)
11 LINE IN 2 jacks (34)

Rear panel



1 RF CHANNEL screw (8)
2 AERIAL OUT connector (7)
3 EURO-AV (LINE 3) connector (7)
4 AUDIO OUT jacks (7)
5 EURO-AV (LINE 1) connector (7)
6 AC IN connector (7)
7 AERIAL IN connector (7)
8 LOCAL/DX switch (15)

Remote commander


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
EJECT
VHS
MENU
CURSOR
EXECUTE
DAILY
WEEKLY
REPLAY
SEARCH
PAUSE
VOL
PROG
PLAY
STOP
SONY

1 ≜ EJECT button (16)

2 Menu operation buttons (7)
  - MENU button
  - CURSOR ↑/↓/←/→ buttons
  - EXECUTE button

3 COUNTER RESET button (17)

4 Programme number buttons and -/-- button (10)

5 TRACKING buttons (31)
  - ▼/▲ NORMAL/SLOW
  - STILL ADJUST buttons
  - AUTO/MANUAL button

6 Tape transport buttons
  - I► SLOW buttons (29)
  - REPLAY button (30)
  - ◄II/II► FRAME buttons (29)
  - ◄◄◄ HI-SPEED REWIND button (16)
  - I◄◄/►►I INDEX SEARCH buttons (32)
  - ⊖/⊕ SEARCH buttons (16)

7 ● REC (recording) button (18)

8 ▷ PLAY button (16)

9 ■ STOP button (16)

10 TV/VTR remote control switch (6)

11 ⏻ (on/standby) button

12 TIMER REC buttons
  - CLEAR button (27)
  - ON/OFF button (19)

13 TV/VTR button (20)

14 AUDIO MONITOR button (17)

15 VIDEO Plus+ buttons (25)
  - VIDEO Plus+ button
  - ONCE button
  - DAILY button
  - WEEKLY button

16 AUDIO DUB button (36)

17 TAPE SPEED button (18)

18 DISPLAY button (17)

19 INPUT SELECT button (8)

20 VOL (volume) button

21 PROG (programme) button (8)

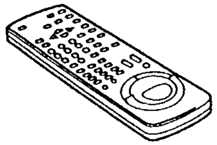
22 II PAUSE button (16)

23 DUAL MODE SHUTTLE ring (16)

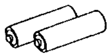
Step 1 Unpacking

Check that you have the following items:

- **Remote commander**

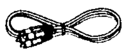


- **R6 (size AA) batteries**

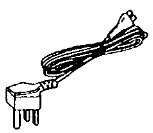


- **Aerial cable**

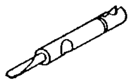
- **Audio cable**



- **Mains lead**

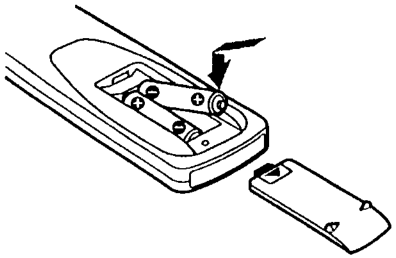


- **RF screwdriver**



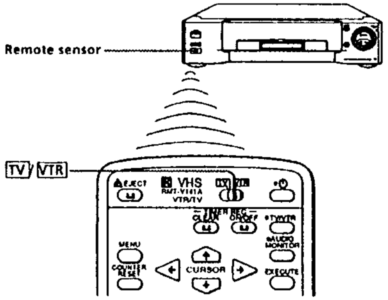
Step 2 Setting up the remote commander

Insert two R6 (size AA) batteries by matching the + and – on the batteries to the diagram inside the battery compartment.



Using the remote commander

You can use this remote commander to operate this VCR and a Sony TV. Buttons on the remote commander marked with a dot (•) can be used to operate your TV.

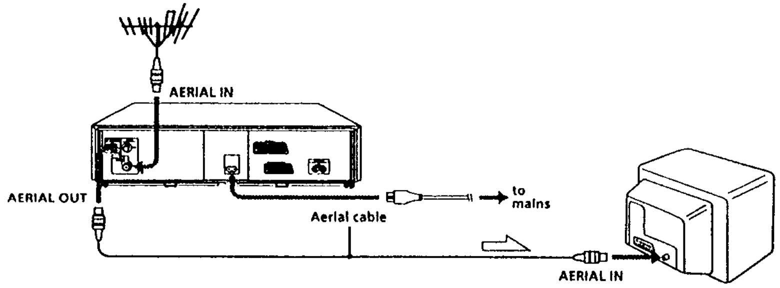

Remote sensor
TV/VTR
EJECT
VHS
MENU
COUNTER RESET
CURSOR
AUDIO MONITOR
EXECUTE

To operate	Set TV/VTR to
the VCR	VTR and point at the remote sensor on the VCR
a Sony TV	TV and point at the remote sensor on the TV

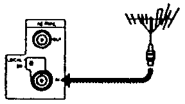
Notes

- With normal use, the batteries should last for approximately three to six months.
- If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery with an old one.
- Do not use different types of batteries.

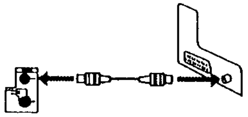
Step 3 Connecting the VCR


AERIAL IN
AERIAL OUT
to mains
Aerial cable
AERIAL IN

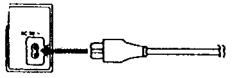
1 **Disconnect the aerial input cable from your TV and connect it to AERIAL IN of the VCR.**



2 **Connect AERIAL OUT of the VCR and the aerial input of your TV using the supplied aerial cable.**



3 **Connect AC IN of the VCR and the mains supply using the mains lead.**
You've completed the basic hookup to watch and record TV programmes.

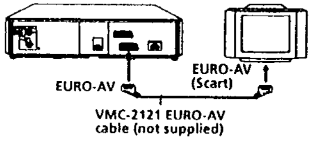


Additional connections

To a TV that has a EURO-AV (Scart) connector

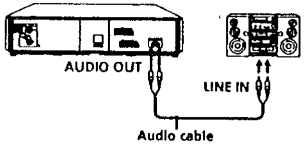
This additional connection can improve picture and sound quality.

1 Connect to the TV as shown on the right.
2 Set RF MODULATOR to OFF.
  1) Press MENU.
  2) Press CURSOR ↑/↓ to select SET UP MENU, then press EXECUTE.
  3) Press CURSOR ↑/↓ to select RF MODULATOR and set to OFF.
  (See page 33.)


EURO-AV
EURO-AV (Scart)
VMC-2121 EURO-AV cable (not supplied)

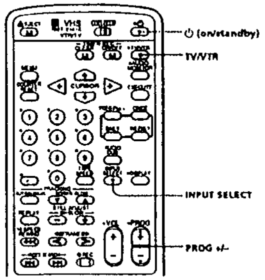
To a stereo system

You can improve sound quality by connecting to a stereo system as shown on the right.


AUDIO OUT
LINE IN
Audio cable

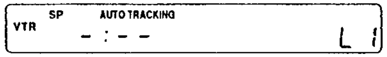
Step 4 Tuning the TV to your VCR

If you have connected the VCR to your TV using the EURO-AV cable, skip this step.

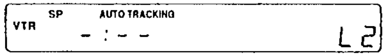


1 ⏻ **Press ⏻ (on/standby) to turn on the VCR.**

2 TV/VTR **Press TV/VTR to light "VTR" in the display window.**



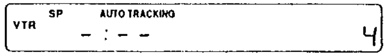
3 INPUT SELECT **Press INPUT SELECT until "L2" appears in the display window.**



4 **Turn on your TV and select a programme position for video playback.**

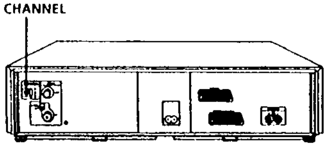
5 **Tune the TV between UHF channels 30 and 39 so that a grey screen appears on the TV screen.**
Refer to your TV manual for tuning instructions.

6 INPUT SELECT **Press INPUT SELECT until "L2" disappears and a programme number appears instead.**



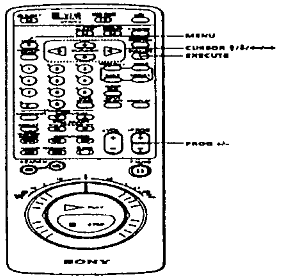
7 PROG **Press PROG +/– to check to see if the TV screen changes to a different programme.**
You have now tuned your TV to the VCR. Whenever you play a tape, set the TV to the programme position selected in step **4** above.

To obtain a clear grey screen
The grey screen may not appear clearly in step **5** above. In this case, turn the RF CHANNEL screw at the rear of the VCR with the supplied RF screwdriver, to a position where the TV clearly displays a grey screen.

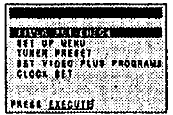


Step 5 Tuning the VCR to TV channels

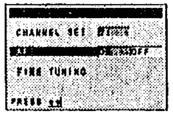
Now you can set your VCR to receive broadcast channels using the on-screen display.



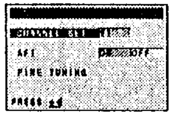
1 MENU **Press MENU.**
The following menu appears on the TV screen.


SET UP MENU
TUNER PRESET
SET VIDEO PLUS PROGRAMS
CLOCK SET
PRESS EXECUTE

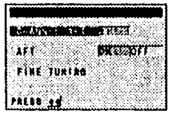
2 CURSOR EXECUTE **Press CURSOR ↑/↓ to move the cursor (▮) to TUNER PRESET, then press EXECUTE.**


CHANNEL SET
ON/OFF
FINE TUNING
PRESS

3 CURSOR **Press CURSOR ↑/↓ to move the cursor (▮) to CHANNEL SET.**

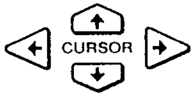

CHANNEL SET
AFT ON/OFF
FINE TUNING
PRESS

4 PROG **Press PROG +/– to select the programme position.**

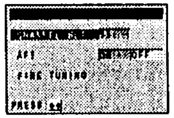

AFT ON/OFF
FINE TUNING
PRESS

(continued)

5



Press CURSOR → to start tuning.
The VCR starts searching for a channel and displays the first one it finds on the TV screen. Press CURSOR ←/→ repeatedly until the channel you want is displayed.


AFT ON/OFF
FINE TUNING
PRESS

If you know the number of the channel you want, press the number buttons. For example, for channel 43, first press "4" and then press "3."

6

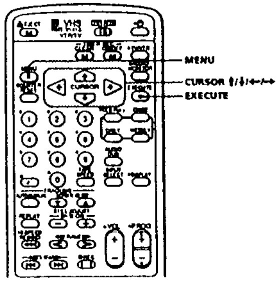
To allocate another channel to another programme position, repeat steps 4 and 5.

7

Press EXECUTE to store all the allocated channels.

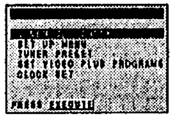
Step 6 Setting the clock

You must set the time and date on the remote commander to be able to use the timer recording features properly.

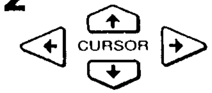


1

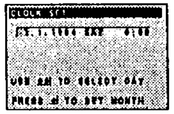
Press MENU.
The main MENU appears on the TV screen.


SET UP MENU
TUNER PRESET
SET VIDEO PLUS PROGRAMS
CLOCK SET
PRESS EXECUTE

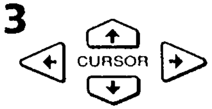
2



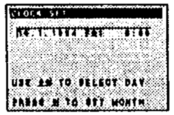
Press CURSOR ↑/↓ to move the cursor (▮) to CLOCK SET, then press EXECUTE.
The CLOCK SET menu appears on the TV screen and the day is highlighted.


CLOCK SET
USE ↑↓ TO SELECT DAY
PRESS → TO SET MONTH

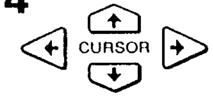
3



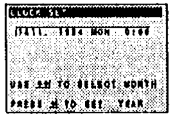
Set the day using CURSOR ↑/↓.
The day of the week is set automatically.


CLOCK SET
USE ↑↓ TO SELECT DAY
PRESS → TO SET MONTH

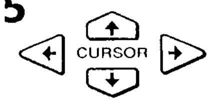
4



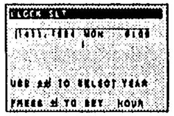
Press CURSOR → to highlight the month.
Set the month using CURSOR ↑/↓.


CLOCK SET
USE ↑↓ TO SELECT MONTH
PRESS → TO SET YEAR

5

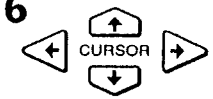


Press CURSOR → to highlight the year.
Set the year using CURSOR ↑/↓.

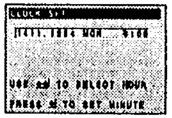

CLOCK SET
USE ↑↓ TO SELECT YEAR
PRESS → TO SET HOUR

(continued)

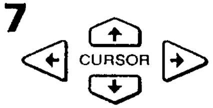
6



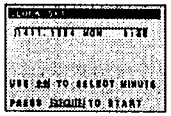
Press CURSOR → to highlight the hour.
Set the hour using CURSOR ↑/↓.



7



Press CURSOR → to highlight the minutes.
Set the minutes using CURSOR ↑/↓.



8

Press EXECUTE to start the clock.

Note

- The menu disappears automatically if you don't proceed for more than one minute.

Step 7

Setting up VIDEO Plus+

VIDEO Plus+ is a feature in Sony VCRs that simplifies the task of programming the VCR to make timer recordings.

How VIDEO Plus+ works

Whenever you want to record a TV programme, all you need to do is look up the programme's "PlusCode," a number assigned to each programme that's published in TV guide magazines. Then, just enter the PlusCode of the programme you want and the VCR is automatically programmed to record that show. It's that simple. With VIDEO Plus+, you no longer have to go through a lengthy and often repetitive procedure when you set start and stop times, channel numbers, and dates. All this information is automatically sent to your VCR when you enter the programme's PlusCode.

How to set up your VCR

Before using VIDEO Plus+ to make timer recordings, check whether the programme position number assigned to each TV channel matches those you have preset on the VCR.

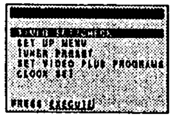
The initial assignment is:

TV channel	BBC 1	BBC 2	ITV	CH 4	CH 5
Programme position	1	2	3	4	5

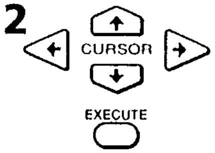
For example, if ITV is preset to programme position 7 on your VCR, you must change the initial assignment using the following procedure. For programme positions whose numbers are the same, you can skip this procedure.

1

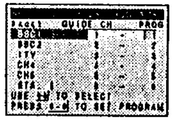
Press MENU.
The main MENU appears on the TV screen.



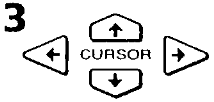
2



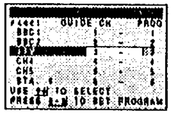
Press CURSOR ↑/↓ to move the cursor (▮) to SET VIDEO PLUS PROGRAMS, then press EXECUTE.
The SET VIDEO PLUS PROGRAMS menu appears.



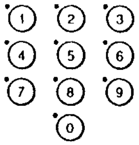
3



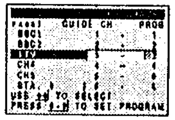
Press CURSOR ↑/↓ to move the cursor (▮) to the TV channel whose programme position number you want to change.
The programme position is highlighted.



4



Enter the programme position number that you have preset on your VCR.
To change other initial settings, repeat steps **3** and **4**.



5

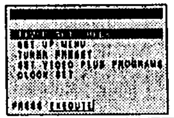
When you've finished, press EXECUTE to exit.

Step 7 Setting up VIDEO Plus+ (continued)

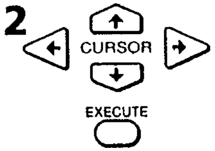
How to preset satellite channels
If you connect the VCR to a satellite tuner, you must preset the satellite channels to make timer settings for satellite programmes using VIDEO Plus+. Once you have made the settings, you don't need to modify them unless you change the VCR-satellite tuner connection. However, if you have connected more than one satellite tuner to the VCR via the AERIAL IN connector, the EURO-AV (Scart) connector (Line 1 and Line 3) and the LINE 2 VIDEO/AUDIO jacks (Line 2), you must change the settings each time you change the tuner on which you want to receive a satellite programme.

1

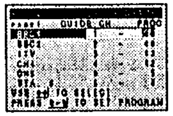
Press MENU.
The main MENU appears on the TV screen.



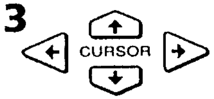
2



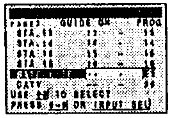
Press CURSOR ↑/↓ to move the cursor (▮) to SET VIDEO PLUS PROGRAMS, then press EXECUTE.
The SET VIDEO PLUS PROGRAMS menu appears.



3

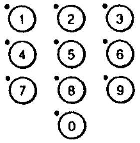


Press CURSOR ↑/↓ to move the cursor (▮) to SATELLITE.
The SET VIDEO PLUS PROGRAMS menu consists of three on-screen pages. Press and hold CURSOR ↓ to move the cursor (▮) to the third page, and select SATELLITE.

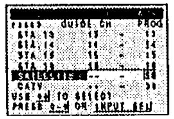


4

Enter the programme position number for satellite broadcasts:

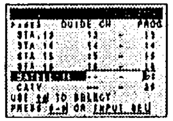


- **If you have connected the satellite tuner via the AERIAL IN jack, enter the programme position number.**
  Use the number that is used for viewing satellite programmes on the VCR. (If you use programme position 50 to view satellite programmes on the VCR, enter "5" and then "0.")



INPUT SELECT

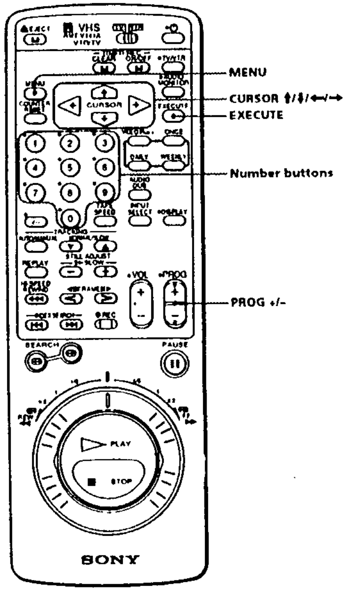
- **If you have connected the satellite tuner via the EURO-AV (Scart) LINE 1/LINE 3 connector or the LINE 2 VIDEO/AUDIO jacks, press INPUT SELECT.**
  If you have connected the satellite tuner via the EURO-AV (Scart) connector, select L1 or L3; if you are using the LINE 2 VIDEO/AUDIO jacks, select L2.

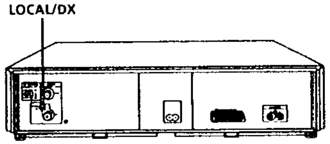


5

When you've finished, press EXECUTE to exit.

Additional tuning instructions

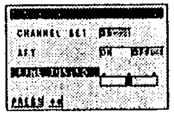




If the picture is not clear

Normally, the Auto Fine Tuning (AFT) function automatically tunes in channels clearly. If, however, the picture is not clear, you may also use the manual tuning function.

1 Press PROG +/– to select the programme number for which you cannot obtain a clear picture.
2 Press MENU, then select TUNER PRESET and press EXECUTE.
3 Select FINE TUNING. The fine tuning meter appears.



4 Press CURSOR ←/→ to get a clearer picture, then press EXECUTE. Note that the AFT (Auto Fine Tuning) setting switches to OFF.

If the TV signal is too strong

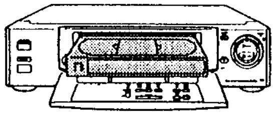
Set the LOCAL/DX switch on the rear of the VCR to LOCAL.

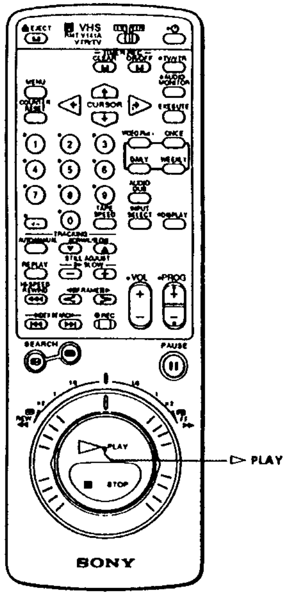
Disabling unwanted programme positions

After tuning the TV channels, you can disable unused programme positions. Positions that are disabled will be skipped later when you press the PROG +/– buttons.

1 Press MENU, then select TUNER PRESET and press EXECUTE.
2 Press PROG +/– until the programme position you want to disable appears beside "PROG" on the TV screen.
3 Press number button "0" twice to display the number "0" beside CHANNEL SET.
4 Repeat steps **2** and **3** for other positions you want to disable.
5 Press EXECUTE.

Playing a tape





Tip
- For further information on searching and playback functions, see "Playing/searching at various speeds" on page 29.

This section shows you how to play back a video tape.

1 **Turn on your TV and tune in to the VCR:**

- If the TV is connected to the VCR using the EURO-AV cable, set the TV to video input.
- If the TV is connected to the VCR using only the aerial cable, set the TV to the programme position for the VCR.

2 **Open the drop down panel and insert a tape.**
The VCR turns on automatically. The tape starts playing automatically if its safety tab has been removed. (See page **21**.)

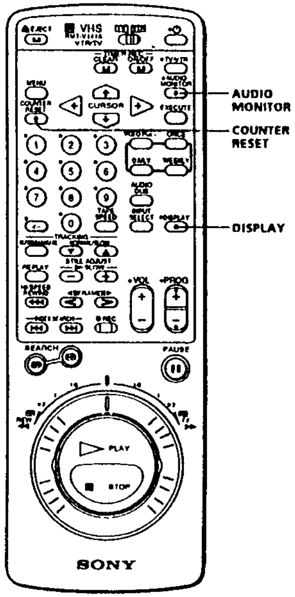
3 **Press ▷ PLAY to start playing.**
When the tape reaches the end, the VCR automatically rewinds it to the beginning. (The power remains on.)

Additional tasks

To	Press
Stop play	■ STOP
Pause play	❚❚ PAUSE
Resume play after pause	❚❚ PAUSE or ▷ PLAY
Search forward	Turn the DUAL MODE SHUTTLE (DMS) ring to ⊕ during playback
Search backward	Turn the DMS ring to ⊖ during playback
Fast-forward the tape	Turn the DMS ring to ▶▶ FF during stop
Rewind the tape	Turn the DMS ring to ◀◀ REW during stop
Rewind the tape at high speed	◀◀◀ HI-SPEED REWIND
Eject the tape	≜ EJECT

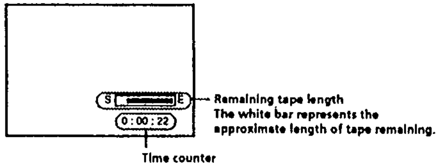
Notes
- When a tape is reinserted, the counter returns to "0H00M00S."
- The counter will not work on tape portions with no recording.

Notes
- When you play a tape recorded in monaural, the sound is heard in monaural regardless of the AUDIO MONITOR setting.
- To play a tape in stereo, you must use the EURO-AV connection or a LINE or AUDIO OUT connection.
- If AUDIO MIX in the SET UP MENU is set to ON, the AUDIO MONITOR button doesn't work.



Displaying the remaining tape length and time counter

Press DISPLAY to turn the display on or off.


S
E
0:00:22
Remaining tape length
The white bar represents the approximate length of tape remaining.
Time counter

Using the time counter

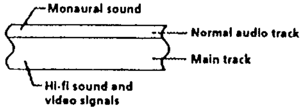
At the point on a tape that you want to find later, press COUNTER RESET to reset the counter to "0H00M00S." When you rewind or advance the tape to this point, refer to the counter.

Playing stereo and bilingual programmes

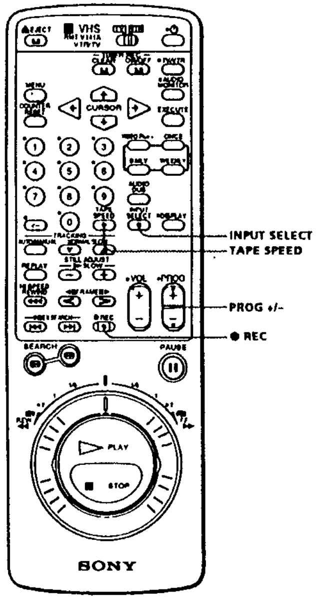
Press AUDIO MONITOR to select the desired sound. Each press of the button changes the display on the VCR and TV screen.

To listen to a		Press AUDIO MONITOR until	
Stereo tape	Bilingual tape	The TV screen shows	The display window indicator shows
Stereo	Main and sub sounds	"STEREO"	"STEREO"
Left channel	Main sound	"Lα"	"MAIN/L"
Right channel	Sub sound	"Rα"	"SUB/R"
Sound on normal audio track (monaural)	Sound on normal audio track	No indication	No indication

How sound is recorded on a video tape
This VCR records sound onto two different tracks. High-fidelity sound (usually stereo) is recorded onto the main track along with the picture. Monaural sound is recorded onto the normal audio track along the edge of the tape.



Recording TV programmes



This section shows you how to record TV programmes in the most basic way: manual recording. With manual recording, you start the VCR recording when the programme begins, then stop it when the programme ends. The VCR also provides the following ways of recording:

- Manually start recording, then stop it automatically—"Recording using the quick timer" (page 19)
- Automatically start and stop recording—"Recording TV programmes using the timer" (page 22)
- Automatically start and stop recording by simply entering the "PlusCode" number—"Recording TV programmes using VIDEO Plus+" (page 25)

1 Turn on your TV and tune in to the VCR:
- If the TV is connected to the VCR using the EURO-AV cable, set the TV to video input.
- If the TV is connected to the VCR using only the aerial cable, set the TV to the programme position for the VCR.

2 Open the drop down panel and insert a tape with its safety tab in place.

3 Press INPUT SELECT until a programme position appears in the VCR's display window.

4 Select the desired programme position by pressing PROG +/-.

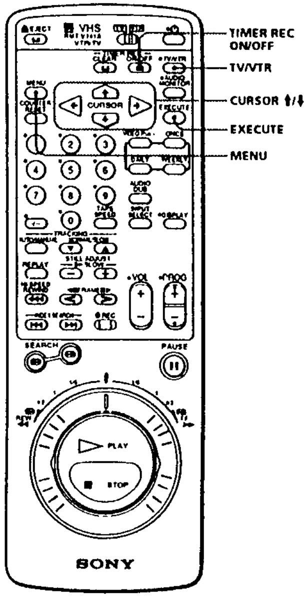
5 Select the tape speed, SP (standard play) or LP (long play), by pressing TAPE SPEED.
See "To select tape speeds" on the next page.

6 Start recording by pressing ● REC.
When the tape reaches the end, the VCR automatically rewinds it to the beginning.

Note
- If you insert a cassette with its safety tab removed, the VCR starts playing. To record on this tape, cover the tab hole on the cassette, or the VCR will eject it when your press ● REC.

Tip
- To select programme positions, you can also use the number buttons on the remote commander. For two-digit numbers, press the -/-- (ten's digit) button followed by the number buttons.

Tips
- To cut out an unwanted scene while recording, press ❚❚ PAUSE, turn the DUAL MODE SHUTTLE ring on the VCR to rewind the tape to the beginning of the unwanted scene, then press ❚❚ PAUSE to resume recording.
- The display appears on the TV screen indicating information about the tape, but the information will not be recorded on the tape.
- If you don't want to watch TV while recording, you can turn off the TV. When using a decoder, make sure to leave it on.



To stop recording
Press ■ STOP.

To select tape speeds
When recording, select either SP or LP. LP provides recording time twice as long as SP. However, SP provides better picture quality. You can mix SP and LP on the same tape. When playing back, the VCR automatically detects the tape speed. See the table below for the maximum recording/playback time in each speed.

Tape type	Maximum recording/playback time	
	SP	LP
E-240	4 hrs.	8 hrs.
E-180	3 hrs.	6 hrs.
E-120	2 hrs.	4 hrs.
E-60	1 hr.	2 hrs.

Recording using the quick timer

The quick timer enables you to record for a specified period of time in intervals of 30 minutes. Once you specify the recording time, the VCR automatically stops recording. Before you begin, check that the clock is set correctly.

After you start recording, press QUICK TIMER until the desired duration appears in the display window. The TIMER REC indicator on the VCR lights up. Each press increases the recording duration in increments of 30 minutes as shown below.

→ 0:00 → 0:30 → 1:00 ------→ 8:30 → 9:00 ┐

The recording duration decreases minute by minute to 0:00, then the VCR turns off automatically.

To stop recording
To stop quick-timer recording while the VCR is recording a programme, press TIMER REC ON/OFF to turn off the TIMER REC indicator on the VCR.

To extend the recording duration while recording
Press QUICK TIMER until the desired duration appears in the display window.

Recording TV programmes (continued)

Watching a TV programme while recording another

You can watch a TV programme and record another at the same time.

1 Press TV/VTR on the top right of the remote commander to turn off the VTR indicator in the display window.

2 Select the desired programme position on the TV.

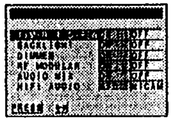
Note

- If you are using the VCR to record while watching another programme, you cannot use a satellite tuner.

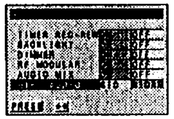
Recording stereo and bilingual programmes: in NICAM system

This VCR receives and records stereo and bilingual programmes based on the NICAM system. When NICAM broadcasts are received, the NICAM indicator appears in the display window; when stereo broadcasts are received, the STEREO indicator appears; when bilingual broadcasts are received, "MAIN/L" appears in the display window.

1 Press MENU and select SET UP MENU.



2 Set HI-FI AUDIO to NICAM by pressing CURSOR ↑/↓/←/→



3 Press EXECUTE to store the setting.

Using the NICAM setting, NICAM broadcasts are recorded as in the following table.

Track	Sound recorded	
	Stereo	**Bilingual**
Hi-fi audio Left channel	Left channel	Main
Hi-fi audio Right channel	Right channel	Sub
Normal audio (monaural)	Standard	Standard

Note

- If you set HI-FI AUDIO to STD, the standard sound is recorded on both the hi-fi and normal audio tracks. (You cannot select the listening sound using AUDIO MONITOR.)

To monitor stereo and bilingual programmes while recording
Press AUDIO MONITOR to select the desired sound.

Stereo programmes

To listen to	Press AUDIO MONITOR until	
	The TV screen shows	**The display window indicator shows**
Stereo sound	"STEREO"	"STEREO"
Standard sound	No indication	No indication

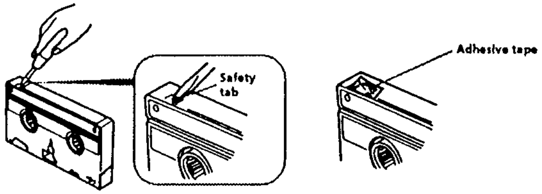
Bilingual programmes

To listen to	Press AUDIO MONITOR until	
	The TV screen shows	**The display window indicator shows**
Main sound	"MAIN"	"MAIN/L"
Sub sound	"SUB"	"SUB/R"
Main and sub sounds	"MAIN/SUB"	"MAIN/L, SUB/R"
Standard sound	No indication	No indication

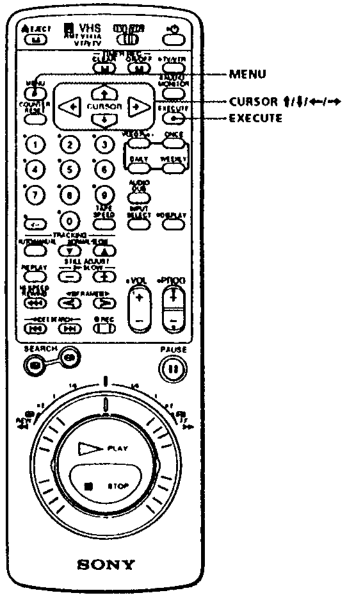
Saving a recording

Video tapes have a safety tab to protect against accidental recording. To prevent accidental erasure of a recording, break off the safety tab with a screwdriver or other tool. A tape with its safety tab removed ejects if you try to record on it.

To record on a tape with its safety tab removed, cover the tab hole with adhesive tape.



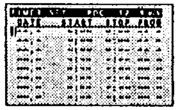
Recording TV programmes using the timer



This section shows you how to let the VCR automatically start and stop recording TV programmes. You can preset up to eight programmes within a one month time frame.

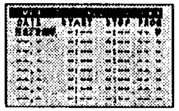
Before you start...
- Check that the clock is set correctly.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- Turn on your TV and tune in to the VCR.

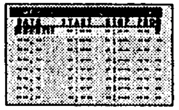
1 **Press MENU and select TIMER SET/CHECK, then press EXECUTE.**
A short beep alerts you if the clock needs to be set.



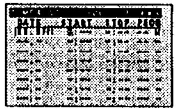
2 **Set the date to start recording:**
1 Press CURSOR →.
Make sure today's date is highlighted. If it isn't, reset the clock to the correct time.
2 Press CURSOR ↑ to set the date and month.
The day of the week is set automatically.

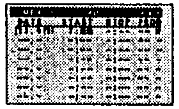
To record the same programme every day or the same day once a week, see "Daily/weekly recording" on page **24**.



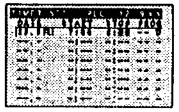


3 **Set the time to start recording:**
1 Press CURSOR → to highlight the hour under "START," then press CURSOR ↑/↓ to set the hour.
2 Press CURSOR → to highlight the minutes under "START," then press CURSOR ↑/↓ to set the minutes.





4 **Press CURSOR →, then set the time to stop recording in the same way.**



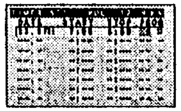
Tips
- To set the channel, you can also use the PROG +/– or number buttons.
- To record video sources from LINE IN 1, 2, or 3 jacks, press INPUT SELECT to display "L1," "L2," or "L3" in the "PROG" position.

Tip
- To set the recording tape speed, you can also use TAPE SPEED.

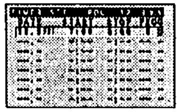
Tip
- To change or correct a setting before confirming it, press CURSOR → to highlight the item you want to change and reset it.

Notes
- If the power is interrupted for more than one hour while the VCR is standing by for recording, the timer settings are cleared. Reset the timer.

5 **Press CURSOR →, then press CURSOR ↑/↓ to select the programme you want to record.**
Only the channels preset in the VCR will appear.



6 **Press CURSOR →, then press CURSOR ↑/↓ to select the tape speed, SP (standard play) or LP (long play).**
See "To select tape speeds" on page **19**.



7 **To confirm your programme, press CURSOR →.**
All the settings stop being highlighted and the cursor (▮) appears in the leftmost column.
To preset another timer setting, move the cursor to the next line using CURSOR ↓ and repeat steps **2** to **7**.

8 **After making the desired timer settings, press EXECUTE.**

9 **Press TIMER REC ON/OFF.**
The TIMER REC indicator on the VCR lights up and the VCR turns off and stands by for recording.
The VCR automatically turns on and starts recording at the preset start time, and turns off at the preset stop time.

To stop recording
To stop while the VCR is recording a program, press TIMER REC ON/OFF to turn off the TIMER REC indicator on the VCR.

To use the VCR while recording
You can do the following tasks during timer recording.

To	Press
Reset the counter to "0H00M00S"	COUNTER RESET
Display tape information on the TV screen	DISPLAY
Check the timer settings	MENU, and select TIMER SET/CHECK
Watch another TV programme	TV/VTR (See "Watching a TV programme while recording another" on page **20**.)

Recording TV programmes using the timer (continued)

Using the VCR before timer recording begins

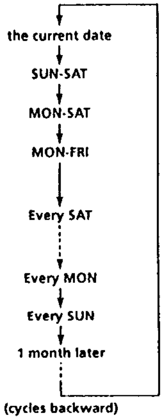
Press TIMER REC ON/OFF to turn off the TIMER REC indicator on the VCR, then press ⏻ (on/standby). The VCR is ready for use.

After using the VCR, press TIMER REC ON/OFF again to turn on the TIMER REC indicator on the VCR. Remember to reset the VCR to stand by for recording before the time you've set the VCR to start recording, or the timer setting will be cancelled.

Daily/weekly recording

Daily recording records the same programme every day of the week; weekly recording records the same programme on the same day, every week.

When you set the date to start recording in step **2** of "Recording TV programmes using the timer," press CURSOR ⬇ until the desired day appears. Each time you press the button, the indication changes as shown on the left.



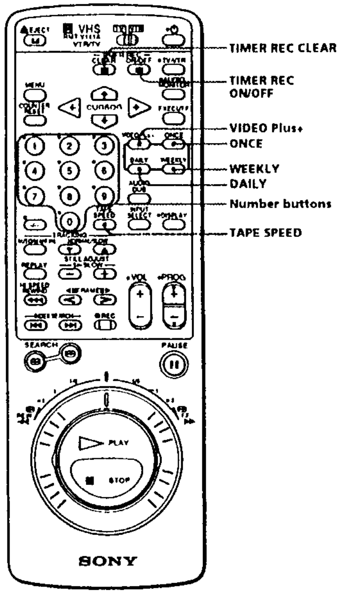
Timer recording with PDC signals (*SLV-E80UX only*)

The broadcast system transmits PDC (Programme Delivery Control) signals with its TV programmes. These signals ensure that your timer recordings are made regardless of broadcast delays, early starts or broadcast interruptions. When setting the timer, make sure to enter the start and stop times exactly as indicated in the TV programme guide, otherwise the PDC function will not work.

1 If the TIMER REC indicator on the VCR is lit, press TIMER REC ON/OFF on the VCR to release the VCR from standby and turn off the indicator.
2 Press ⏻ to turn on the VCR.
3 Press PDC on the VCR.
The PDC indicator lights up in the display window.
4 If you turned off the TIMER REC indicator in step **1**, press TIMER REC ON/OFF on the VCR.
The VCR returns to recording standby. Once you switch on the PDC function, it works on all timer settings that are set to programmes with PDC signals.

Notes
- If recording times overlap due to a PDC timer shift, the programme that was broadcast first has priority. The second programme will begin to record only when the first programme has finished.
- If the PDC signal is too weak or the broadcasting station failed to transmit PDC signals, the VCR will record the programme without using the PDC function even if the PDC indicator is lit in the display window.

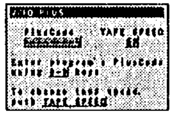
Recording TV programmes using VIDEO Plus+



This section shows you another way of timer recording: recording using VIDEO Plus+. This allows you to record TV programmes more easily. Just enter the programme's "PlusCode," and the VCR will automatically record the programme. You can preset up to eight programmes within a one month time frame.

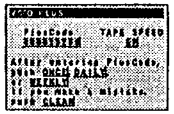
Before you start...
- Check that the clock is set correctly.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- Turn on your TV and tune in to the VCR.

1 **Press VIDEO Plus+.**
A short beep alerts you if the clock needs to be set.



2 **Enter the desired programme's PlusCode using the number buttons.**
If you make a mistake, press TIMER REC CLEAR and enter the PlusCode again.

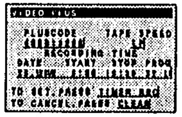
3 **Select the tape speed, SP (standard play) or LP (long play), by pressing TAPE SPEED.**



4 **Press ONCE, DAILY or WEEKLY according to the following:**

To record the programme	Press
Only once	ONCE
Monday to Friday at the same scheduled time	DAILY
Every week at the same scheduled time	WEEKLY

The recording information appears on the TV screen: date, program start and stop times, programme position number and tape speed. Check that the information is correct. If not, press TIMER REC CLEAR. To preset another timer setting, repeat steps **1** to **4**.



Tip
- If you've entered the wrong PlusCode, press TIMER REC CLEAR and start again from the beginning.

(continued)

5 Press TIMER REC ON/OFF.
The TIMER REC indicator on the VCR lights up and the VCR stands by for recording.
The VCR automatically turns on, records the programme and turns off.

Note
- If the power is interrupted for more than one hour while the VCR is standing by for recording, the timer settings are cleared. Reset the timer.

To record satellite broadcasts
1 Turn on the satellite tuner.
2 On the satellite tuner, select the satellite programme for which you wish to make a timer setting.
3 Repeat the steps described above.
4 Keep the satellite tuner turned on until the VCR finishes recording the satellite programme for which you have made a timer setting.

To stop recording
To stop while the VCR is recording a programme, press TIMER REC ON/OFF to turn off the TIMER REC indicator on the VCR.

To use the VCR while recording
You can do the following tasks while recording using VIDEO Plus+.

To	Press
Reset the counter to "0H00M00S"	COUNTER RESET
Display tape information on the TV screen	DISPLAY
Check the timer settings	MENU and select TIMER SET/CHECK
Watch another TV programme	TV/VTR (See "Watching a TV programme while recording another" on page 20.)

Notes
- You cannot set VIDEO Plus+ in the following cases:
  - When the VCR is turned off.
  - While recording using the timer or quick timer.
- The timer will not accept settings in the following cases:
  - When you select DAILY for a Saturday and Sunday program.
  - When you select DAILY or WEEKLY for a programme more than seven days ahead.
  - When you enter the PlusCode of a programme that has already ended.

Using the VCR before recording begins

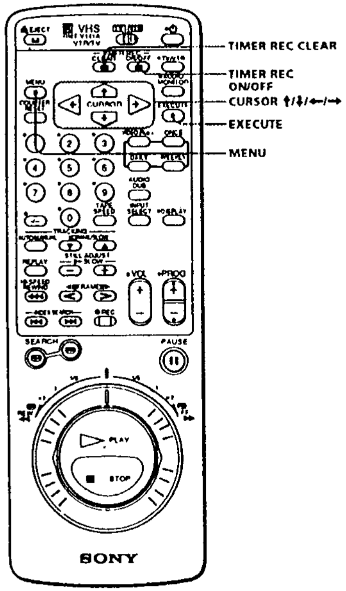
Press TIMER REC ON/OFF to turn off the TIMER REC indicator on the VCR, then press ⏻ (on/standby). The VCR is ready for use.

After using the VCR, press TIMER REC ON/OFF again to turn on the TIMER REC indicator on the VCR. Remember to reset the VCR to stand by for recording before the recording programme begins, or the setting will be cancelled.

Checking/changing/cancelling timer settings

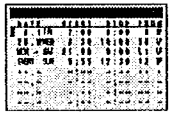
This section shows you how to check, change and cancel the timer settings after you've stored them in the VCR.

Before you start...
Turn on your TV and tune in to the VCR.



1 Press TIMER REC ON/OFF to turn off the TIMER REC indicator on the VCR.

2 Press ⏻ (on/standby) to turn on the VCR, then press MENU and select TIMER SET/CHECK. Then press EXECUTE.



3 Check the timer settings:
- If you do not want to change or cancel the settings, press EXECUTE, then press TIMER REC ON/OFF to return to recording standby.
- If you want to change or cancel the settings, press CURSOR ↑/↓ to move the cursor (▮) to the setting you want to change or cancel.

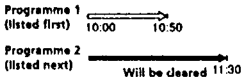
4 Change or cancel the timer setting:
- To change the setting, press CURSOR ↑/↓ to highlight the item you want to change, and reset it using CURSOR ↑/↓. Then, press CURSOR → to move the cursor to the leftmost column.
- To cancel the setting, press TIMER REC CLEAR.

5 Press EXECUTE.
The VCR returns to the original screen. When there are any other timer settings left in the TIMER SET/CHECK menu, turn the VCR off to return to recording standby.

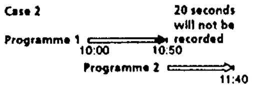
To check the timer settings during timer recording
Press MENU and select TIMER SET/CHECK. After checking, press EXECUTE to turn off the display.

Checking/changing/cancelling timer settings (continued)

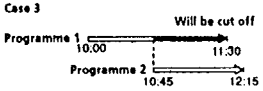
Case 1



Case 2



Case 3



When the timer settings overlap

The VCR will not record overlapping programmes. If any of your timer settings overlap, change the settings.

Case 1: If you preset two programmes to start recording at the same time...

The programme listed first in the TIMER SET/CHECK menu has priority over the other programmes. The timer settings of lower priority programmes will be erased from the TIMER SET/CHECK menu when the first programme begins recording.

Case 2: If you preset programme 2 to start recording at the same time you preset programme 1 to finish recording...

The last 20 seconds of programme 1 will not be recorded because the VCR will enter recording pause for programme 2 before programme 1 is finished.

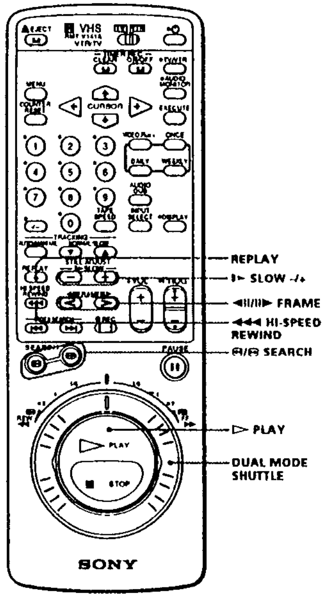
Case 3: If you preset programme 2 to start recording before programme 1 is finished recording...

Programme 2 will start recording before programme 1 has finished.

Additional Operations

Playing/searching at various speeds

You can play back a tape at various speeds: high-speed, slow motion, frame by frame and so on. These options are also useful for searching for a specific point during playback. The sound is muted during these operations.



Playback options	Operation	To resume normal playback
Playing at various speeds:	During playback, turn the DUAL MODE SHUTTLE ring right or left to:	Release the ring.
One-fifth the normal speed	1/5	
Twice the normal speed	X2	
High speed	⊖ or ⊕	
Fast-forwarding/ Rewinding	During stop, turn the DUAL MODE SHUTTLE ring to ►► FF or to ◄◄ REW and release.	Press ▷ PLAY.
Viewing the picture during fast-forward or rewind	During fast-forward, turn the DUAL MODE SHUTTLE ring to ►► FF. During rewind, turn the ring to ◄◄ REW.	To return to the previous mode, release the ring.
Locking in a high-speed picture	During playback or pause, press ⊕ SEARCH or ⊖ SEARCH. To change direction, press ◄II FRAME (backward) or II► FRAME (forward).	Press ▷ PLAY.
Locking in a slow-motion picture	During playback or pause, press I► SLOW -/+. To change direction, press ◄II FRAME (backward) or II► FRAME (forward).	Press ▷ PLAY.
Playing frame by frame	During pause, press II► FRAME to advance the picture one frame or ◄II FRAME to reverse the picture one frame.	Press ▷ PLAY.
Playing in reverse	During playback, press ◄II FRAME.	Press ▷ PLAY.

Tip
- Adjust the picture using the ▼/▲ TRACKING NORMAL/SLOW STILL ADJUST buttons if:
  - Streaks appear while playing in slow motion.
  - Bands appear on the top or bottom while pausing.
  - The picture shakes while pausing.

Note
- If you use these functions in the LP mode, noise may appear or there may be no colour.

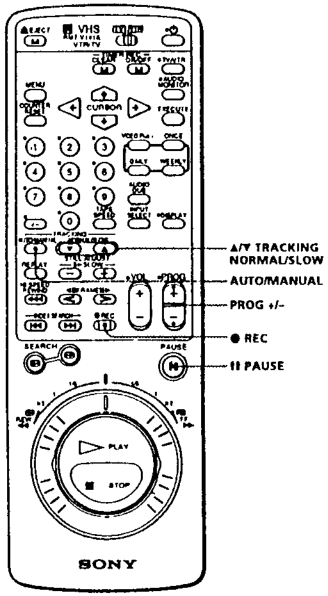
(continued)

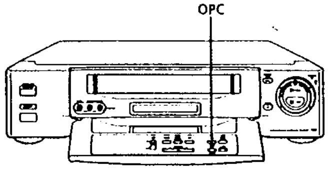
Playing/searching at various speeds (continued)

Playback options	Operation	To resume normal playback
Replaying a scene	During playback or pause, press REPLAY and hold it down until the desired scene appears. When you release the button, the scene is played back in slow motion.	Press ▷ PLAY or ❚❚ PAUSE.
Rewinding at high speed	Press ◀◀◀ HI-SPEED REWIND.	Press ▷ PLAY.
Rewind and restart play	During stop, press ▷ PLAY on the VCR while holding the DUAL MODE SHUTTLE ring on the VCR at the ◀◀ REW position, or while pressing down ◀◀◀ HI-SPEED REW on the VCR.	—

Note
- When rewinding at high speed, you will not see the time counter.

Adjusting the picture





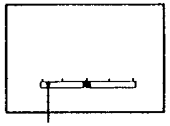
Notes
- Tapes recorded using the OPC function are played back normally on VCRs that do not have the OPC function.
- Press ❚❚ PAUSE to release recording after the OPC indicator stops flashing. If you start recording before the OPC indicator stops flashing, the OPC function is cancelled.

The VCR automatically adjusts the picture for the best possible playback or recording. If, however, you find the automatic adjustment unsatisfactory, you can adjust the picture manually.

Adjusting the tracking

Though the VCR automatically adjusts the tracking when playing a tape (the AUTO TRACKING indicator flashes in the display window, then lights steadily), distortion may occur if the tape was recorded in poor condition. If so, manually adjust the tracking condition.

Press the ▼/▲ TRACKING NORMAL/SLOW buttons to display the tracking meter. The distortion should disappear as you press one of the two buttons. If you cannot get a clear picture with manual adjustment, press TRACKING AUTO/MANUAL to return to automatic adjustment.



About Optimum Picture Control (OPC)

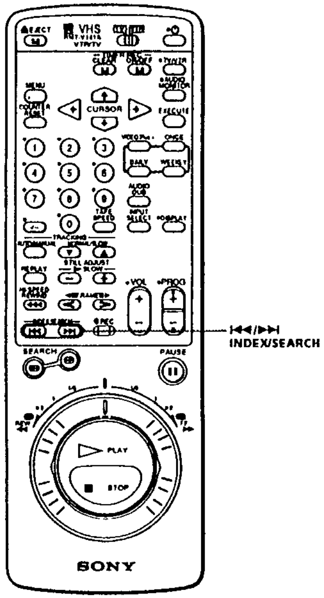
Optimum Picture Control (OPC) automatically improves recording and playback quality by adjusting the VCR to the condition of the video heads and tape. To maintain better picture quality, we recommend that you leave OPC on (with the OPC indicator in the display window lit).

To use OPC during playback
The OPC function automatically works on all types of tapes, including rental tapes. You can play a tape using the OPC function even if the tape was not recorded with it.

To use OPC while recording
Whenever you insert a tape and first start recording, the VCR adjusts to the tape using the OPC function (the OPC indicator flashes rapidly). This adjustment is retained until the tape is ejected. There is a short delay before the VCR actually starts recording while the VCR analyzes the tape.

If you want to start recording precisely the first time you record, set the VCR to recording pause mode (the OPC indicator flashes slowly) and press ● REC to let the VCR analyze the tape. When the OPC indicator stops flashing, press ❚❚ PAUSE to start recording. Recording begins immediately.

Searching using the *index function*



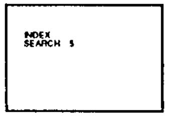
The VCR automatically marks an index signal at the point where recording starts (with the exception of when you start recording from recording pause). Use this as a reference to find the beginning of the recording. Since the index number indicates the relative position from the current position, specify how many index signals ahead or behind the specific index signal is from the current position.

---

1 **Insert an indexed tape into the VCR.**

---

2 **Press the I◀◀/▶▶I INDEX SEARCH buttons repeatedly until the index number you want appears on the TV screen:**



- To locate succeeding programmes, press ▶▶I INDEX SEARCH.
- To locate preceding programmes, press I◀◀ INDEX SEARCH.

The VCR starts searching and the index number on the TV screen counts down to zero. Playback starts automatically from that point.

Looking at menu options

The SET UP MENU provides you with various options to set up and customise your VCR. See the table below for the available menu choices. Initial settings are indicated in bold letters.

Menu choices

Menu option	Set this option to
TIMER REC-REW	• ON to automatically rewind the tape after all timer settings have been recorded. • **OFF** to cancel this setting.*
BACKLIGHT	• **ON** to turn on the LCD backlight. • OFF to turn it off.
DIMMER	• ON to dim the LCD backlight. • **OFF** to brighten it.
RF MODULATOR	• **ON** if you have connected the VCR to your TV using only the aerial cable. • OFF if you have connected the VCR to your TV using the EURO-AV cable.
AUDIO MIX	• ON to listen to the hi-fi and normal audio tracks at the same time. The AUDIO MONITOR button becomes inoperable. • **OFF** to select the sound using the AUDIO MONITOR button. For details, see page 37.
HI-FI AUDIO	• **NICAM** to record NICAM broadcasts on a hi-fi audio track. • STD to record standard sound on a hi-fi audio track. For details, see page 20.

Tip

- See "How sound is recorded on a video tape" on page 17.

---

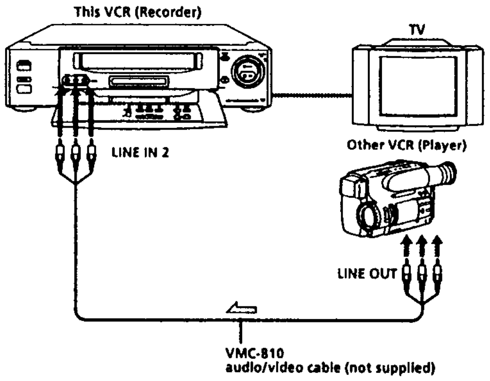
* If the tape has been recorded to the end, the VCR rewinds it regardless of this setting.

Editing

Editing with another VCR

This section shows you how to edit to or from another VCR or camcorder. You can make a copy of a tape using this VCR for recording or playback.

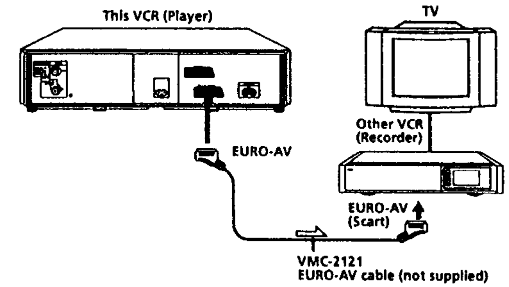
How to hook up to record on this VCR


This VCR (Recorder)
TV
LINE IN 2
Other VCR (Player)
LINE OUT
VMC-810
audio/video cable (not supplied)

⇦ : Signal flow

Tips
- Make sure you connect the plugs to jacks of the same colour.
- If the other VCR is a monaural type, leave the red plugs unconnected.

How to hook up to record on another VCR

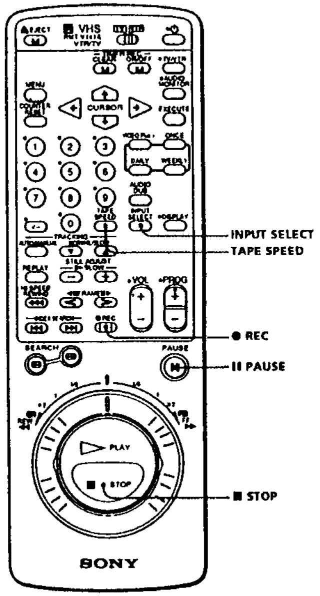

This VCR (Player)
TV
EURO-AV
Other VCR (Recorder)
EURO-AV (Scart)
VMC-2121
EURO-AV cable (not supplied)

⇦ : Signal flow

Tip
- If the other VCR doesn't have a EURO-AV (Scart) connector, use the VMC-2106 EURO-AV cable instead and connect the cable to the line in jacks of the other VCR.

Operation (when recording on this VCR)

Before you start editing
- Press INPUT SELECT to display "L2" in the display window.
- Press TAPE SPEED to select the recording tape speed (SP/LP).
- On this VCR, set the EDIT switch on the VCR to ON.
  If the other VCR has a similar switch, set it to ON as well.


INPUT SELECT
TAPE SPEED
● REC
II PAUSE
■ STOP
PLAY
SONY

1 **Insert a source tape with its safety tab removed into the other (playback) VCR. Search for the point to start playback and set it to playback pause.**

2 **Insert a tape into this (recording) VCR. Search for the point to start recording and press II PAUSE.**

3 **Press ● REC on this VCR and set it to recording pause.**

4 **To start editing, press the II PAUSE buttons on both VCRs to release the VCRs from pause.**
For best results, press the pause button on the other VCR before pressing II PAUSE on this VCR.

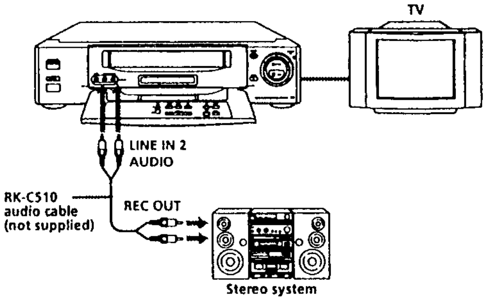
To stop editing
Press the ■ STOP buttons on both VCRs.

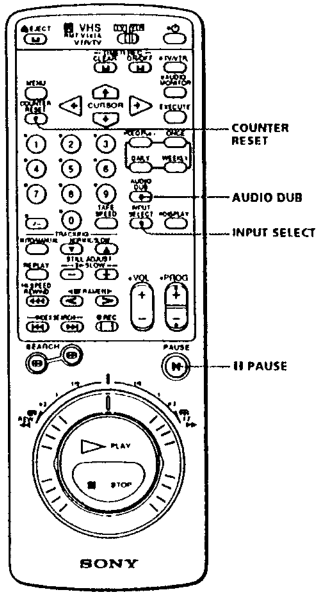
Tips
- To make your editing more precise, use the pause buttons on both VCRs.
- To cut out unwanted scenes while editing, press II PAUSE on this VCR when an unwanted scene begins. When it ends, press II PAUSE again to resume recording (Assemble Editing).

Audio dubbing

You can add music or narration on the normal audio track. The monaural sound previously recorded is replaced while the original picture and hi-fi sound on the main track are retained. (See page **17**.)

How to hook up


TV
LINE IN 2
AUDIO
RK-C510
audio cable
(not supplied)
REC OUT
Stereo system


COUNTER
RESET
AUDIO DUB
INPUT SELECT
II PAUSE
SONY

Operation

Before you start editing
Press INPUT SELECT to display "L2" in the display window.

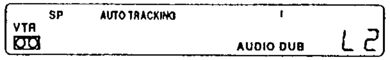
1 **Play a recording source. Search for the point to start playback and set it to playback pause.**

2 **Insert the prerecorded tape into this VCR. Search for the end of the section you want to dub new sound to and press II PAUSE.**
Make sure that the tape has its safety tab in place so that you can dub new sound onto it.

3 **Press COUNTER RESET on this VCR to reset the counter to "0H00M00S."**

4 **Rewind the tape to the beginning of the section.**
This VCR pauses.

5 **Press AUDIO DUB.**
The AUDIO DUB indicator lights up in the display window.


SP
AUTO TRACKING
VTR
AUDIO DUB
L2

6 **To start editing, simultaneously press the II PAUSE buttons on this VCR and the stereo system.**
When the counter of this VCR reaches "0H00M00S," audio dubbing stops automatically.

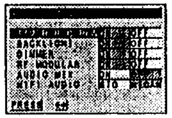
Note
- You must be in playback pause mode before pressing AUDIO DUB. (If you are in recording pause mode, you cannot use the audio dubbing features.)

To stop editing
Press the ■ STOP buttons on this VCR and the stereo system.

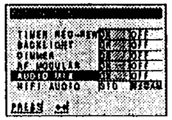
Listening to both audio tracks during playback

When playing an audio-dubbed tape, you have a choice of listening sound. To listen to the sounds recorded on the hi-fi audio and normal audio tracks at the same time, use the SET UP MENU.

1 Press MENU and select SET UP MENU.


BACKLIGHT
DIMMER
RF MODULAR
AUDIO MIX
HIFI AUDIO
ON
OFF
STD
PRESS

2 Set AUDIO MIX to ON by pressing CURSOR ↑/↓/←/→.
The AUDIO MONITOR button becomes inoperative, and the sound you hear is mixed.


TIMER REC-REW
BACKLIGHT
DIMMER
RF MODULAR
AUDIO MIX
HIFI AUDIO
ON
OFF
STD
PRESS

3 Press EXECUTE to store the setting.
After playing the audio-inserted tape, reset AUDIO MIX to OFF.

Tip
- See "How sound is recorded on a video tape" on page 17.

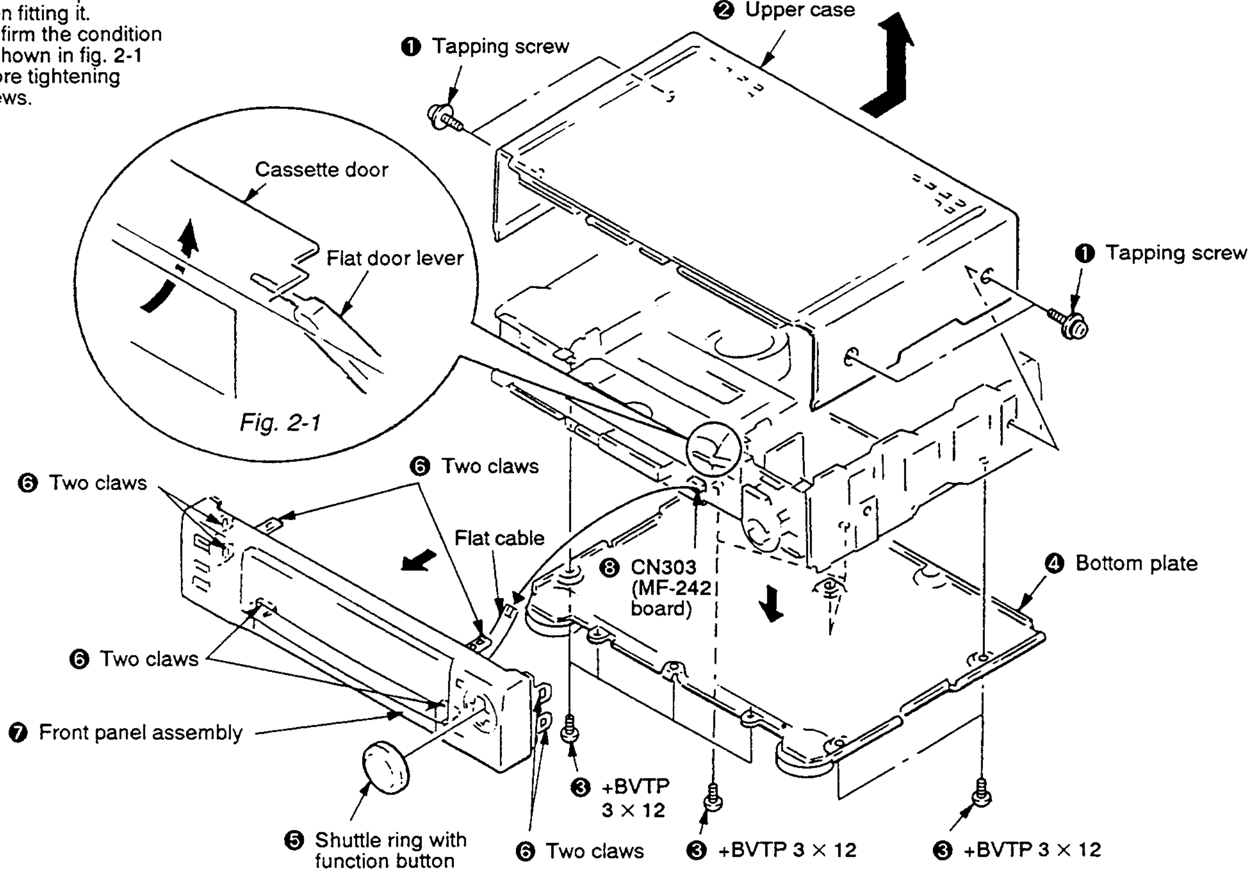
Note
- If AUDIO MIX remains ON, the AUDIO MONITOR button remains inoperative.

SECTION 2
DISASSEMBLY

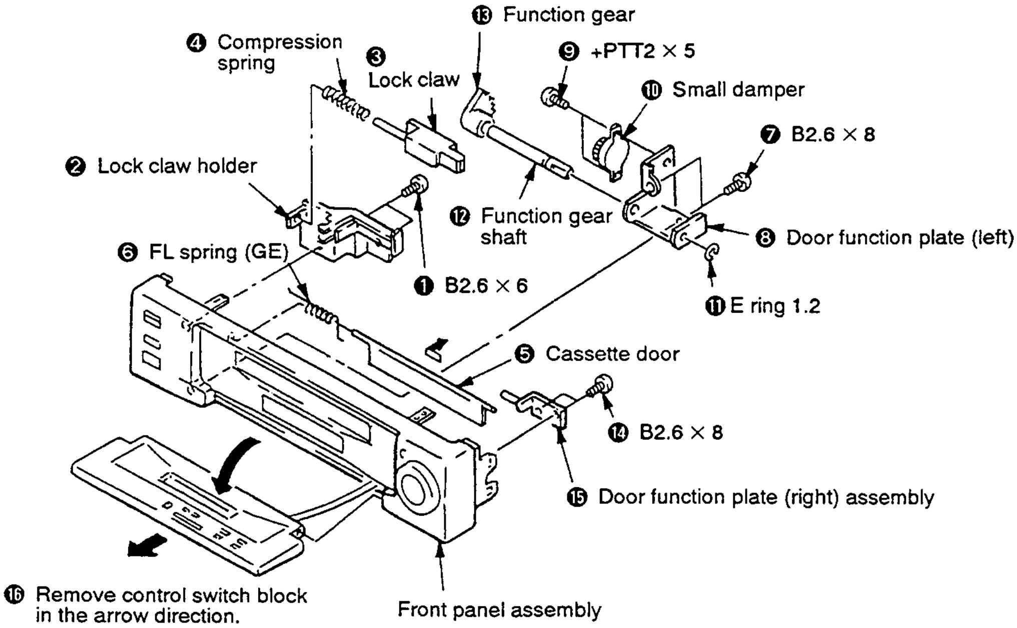
Note: Follow the disassembly procedure in the numerical order given.

2-1. FRONT PANEL ASSEMBLY AND CASE

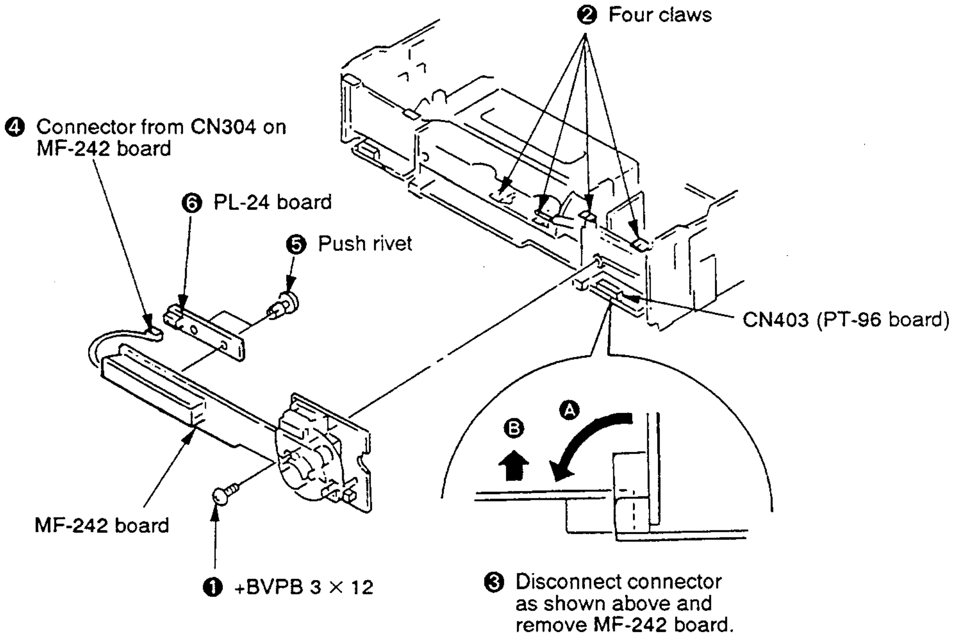
- * Note on fitting front panel assembly
  Be sure to open cassette door 90 ° when fitting it.
- Confirm the condition as shown in fig. 2-1 before tightening screws.


❷ Upper case
❶ Tapping screw
Cassette door
Flat door lever
Fig. 2-1
❶ Tapping screw
❻ Two claws
❻ Two claws
Flat cable
❽ CN303 (MF-242 board)
❹ Bottom plate
❻ Two claws
❼ Front panel assembly
❸ +BVTP 3 × 12
❺ Shuttle ring with function button
❻ Two claws
❸ +BVTP 3 × 12
❸ +BVTP 3 × 12

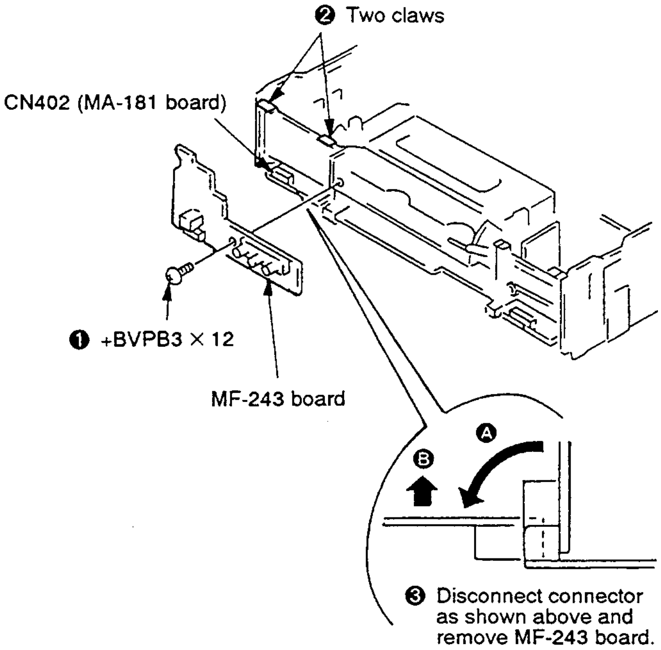
2-2. CONTROL SWITCH BLOCK


⓭ Function gear
❹ Compression spring
❸ Lock claw
❾ +PTT2 × 5
❿ Small damper
❼ B2.6 × 8
❷ Lock claw holder
⓬ Function gear shaft
❽ Door function plate (left)
❻ FL spring (GE)
❶ B2.6 × 6
⓫ E ring 1.2
❺ Cassette door
⓮ B2.6 × 8
⓯ Door function plate (right) assembly
⓰ Remove control switch block in the arrow direction.
Front panel assembly

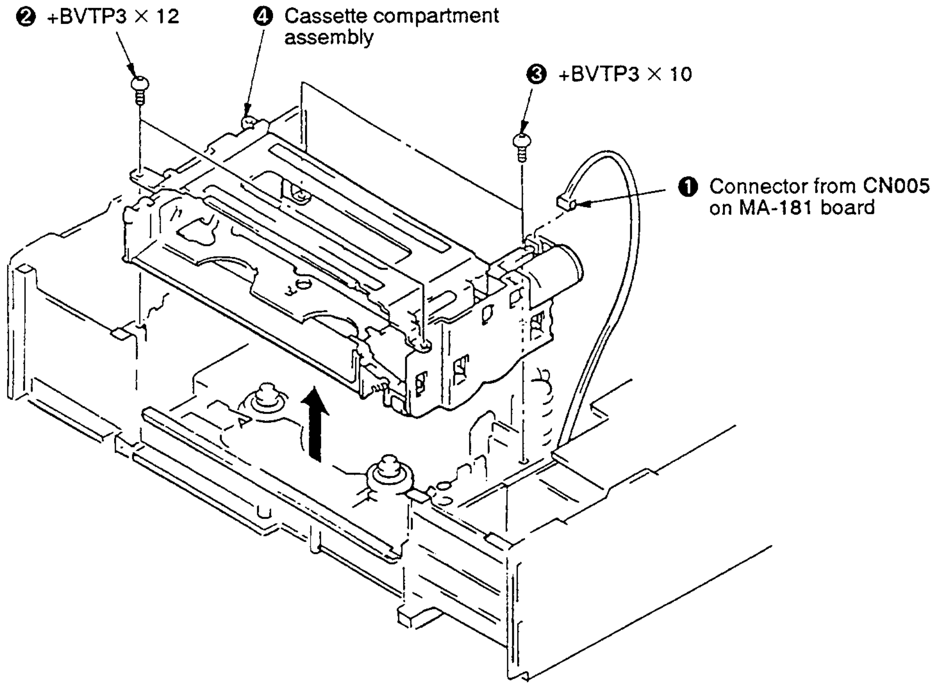
2-3. MF-242 AND PL-24 BOARDS


❷ Four claws
❹ Connector from CN304 on MF-242 board
❻ PL-24 board
❺ Push rivet
CN403 (PT-96 board)
Ⓐ
Ⓑ
MF-242 board
❶ +BVPB 3 × 12
❸ Disconnect connector as shown above and remove MF-242 board.

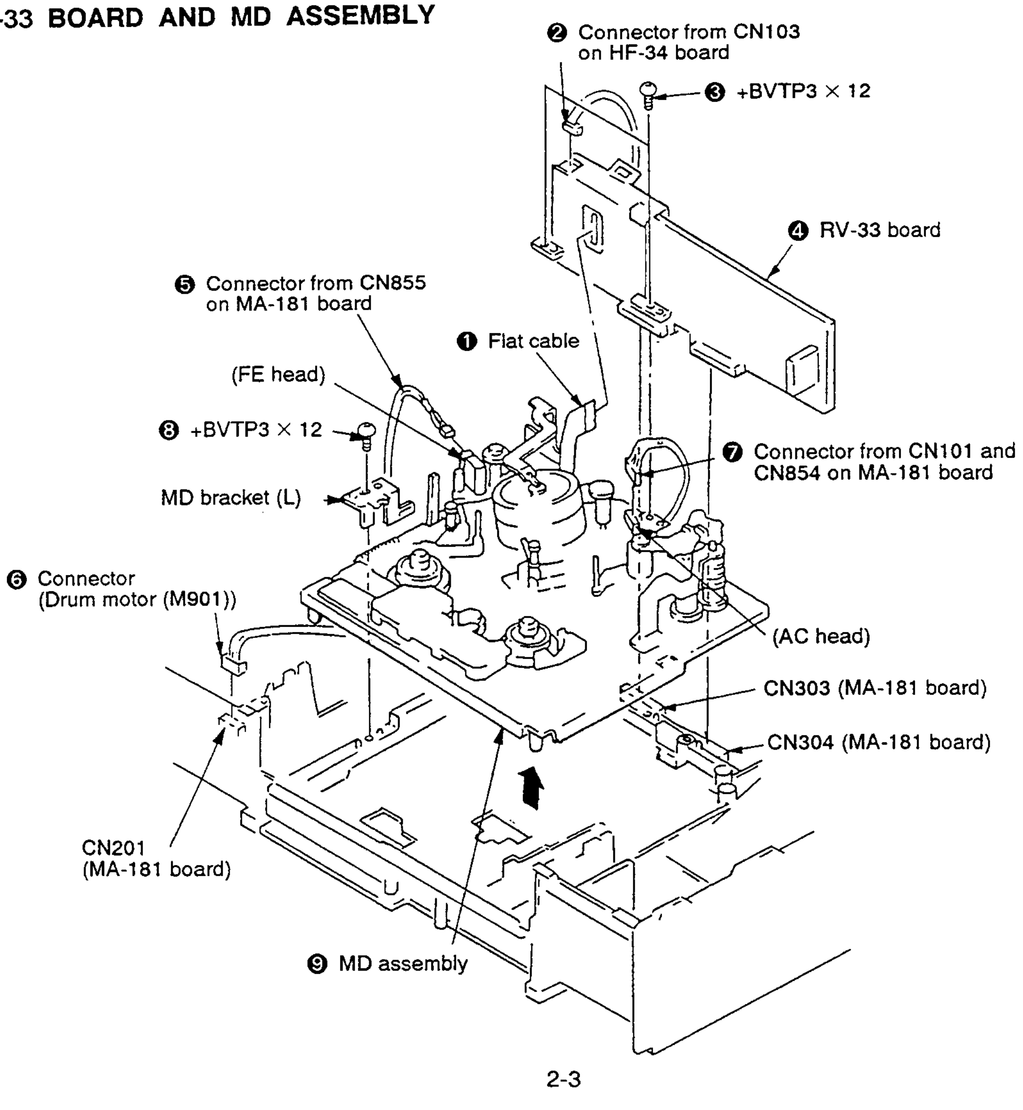
2-4. MF-243 BOARD


❷ Two claws
CN402 (MA-181 board)
❶ +BVPB3 × 12
MF-243 board
Ⓐ
Ⓑ
❸ Disconnect connector as shown above and remove MF-243 board.

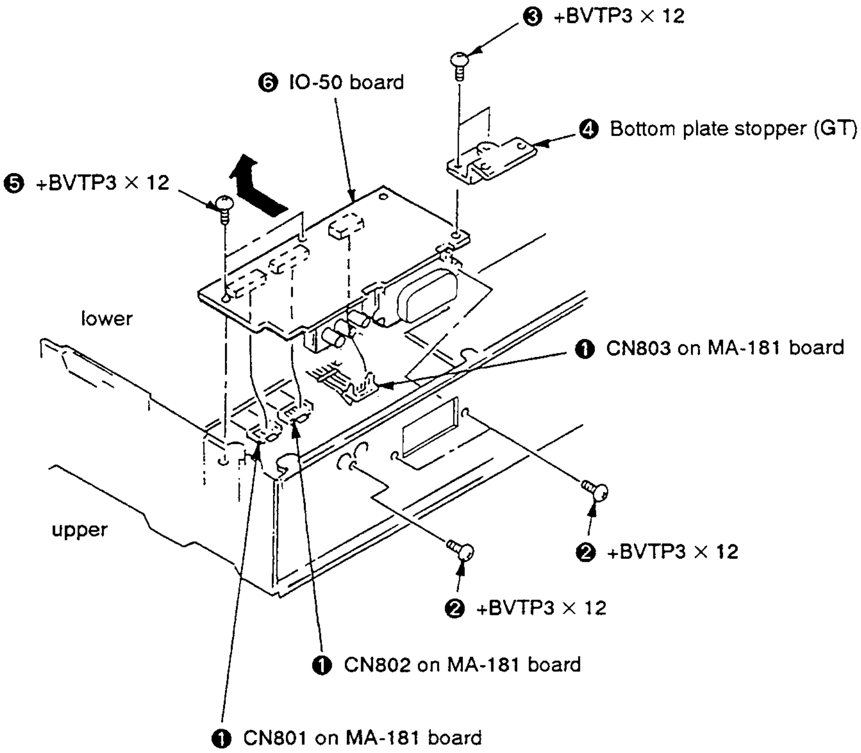
2-5. CASSETTE COMPARTMENT ASSEMBLY


❷ +BVTP3 × 12
❹ Cassette compartment assembly
❸ +BVTP3 × 10
❶ Connector from CN005 on MA-181 board

2-6. RV-33 BOARD AND MD ASSEMBLY

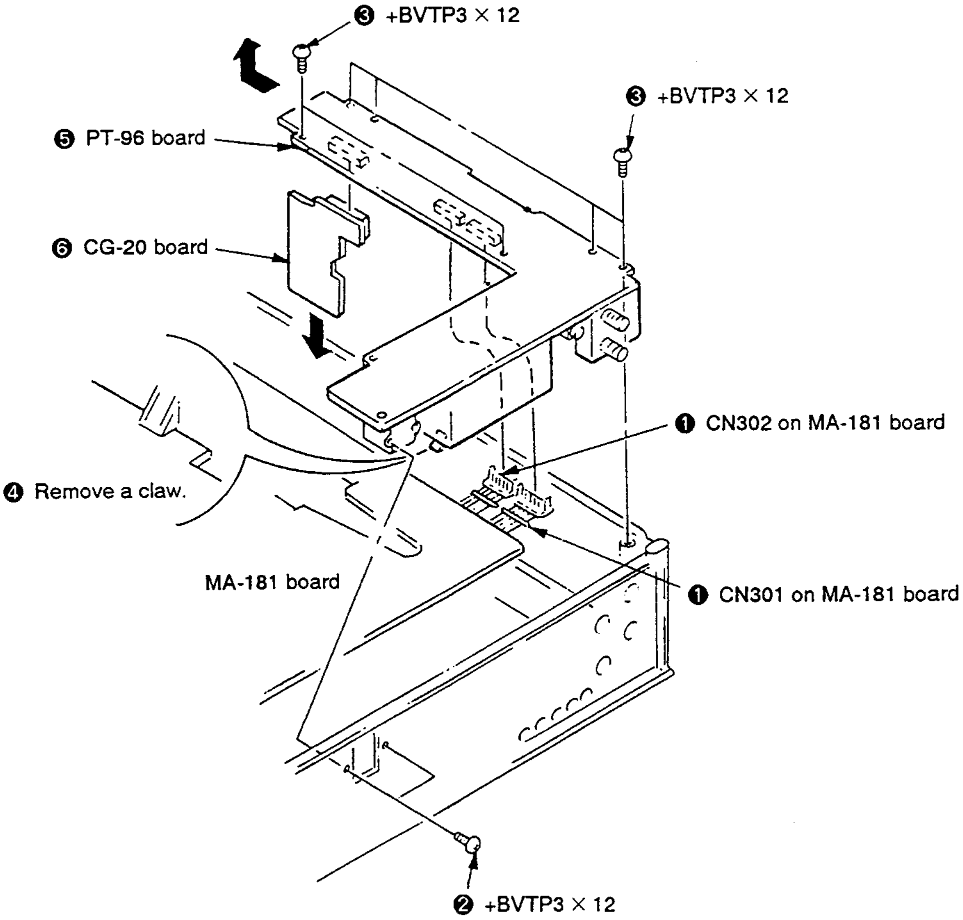

❷ Connector from CN103 on HF-34 board
❸ +BVTP3 × 12
❹ RV-33 board
❺ Connector from CN855 on MA-181 board
❶ Flat cable
(FE head)
❽ +BVTP3 × 12
❼ Connector from CN101 and CN854 on MA-181 board
MD bracket (L)
❻ Connector (Drum motor (M901))
(AC head)
CN303 (MA-181 board)
CN304 (MA-181 board)
CN201 (MA-181 board)
❾ MD assembly

2-7. IO-50 BOARD



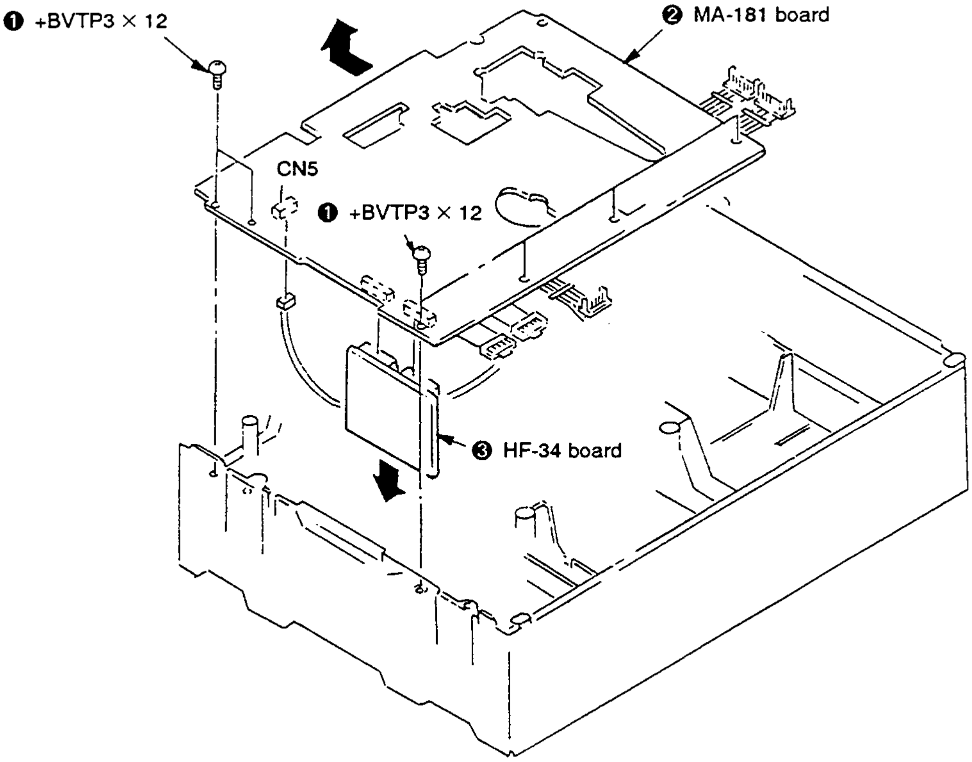
❸ +BVTP3 × 12
❻ IO-50 board
❹ Bottom plate stopper (GT)
❺ +BVTP3 × 12
lower
❶ CN803 on MA-181 board
upper
❷ +BVTP3 × 12
❷ +BVTP3 × 12
❶ CN802 on MA-181 board
❶ CN801 on MA-181 board

2-8. PT-96 AND CG-20 BOARDS



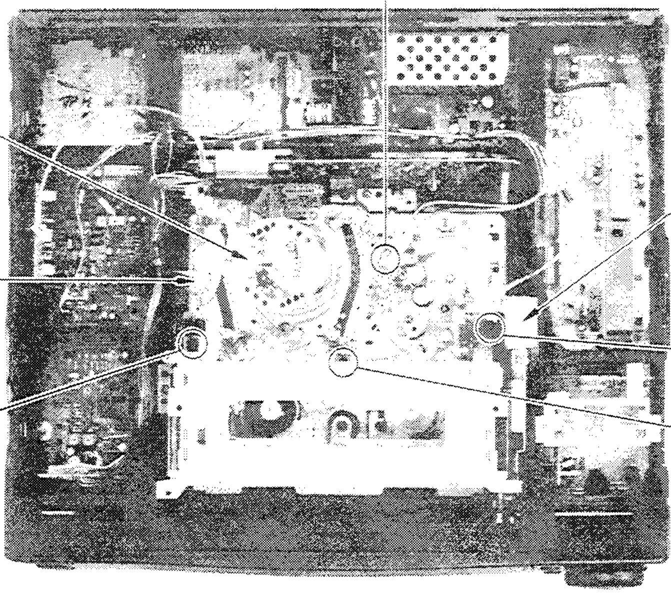
❸ +BVTP3 × 12
❸ +BVTP3 × 12
❺ PT-96 board
❻ CG-20 board
❶ CN302 on MA-181 board
❹ Remove a claw.
MA-181 board
❶ CN301 on MA-181 board
❷ +BVTP3 × 12

2-9. MA-181 AND HF-34 BOARDS

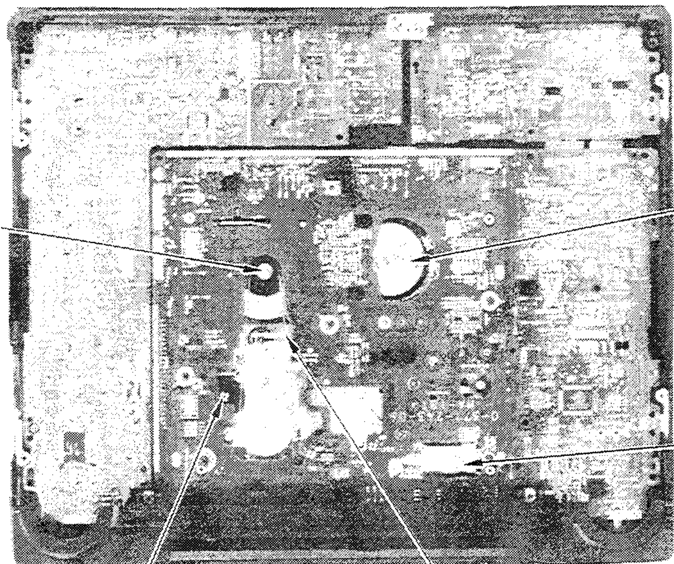

❶ +BVTP3 × 12
❷ MA-181 board
CN5
❶ +BVTP3 × 12
❸ HF-34 board

2-10. INTERNAL VIEWS

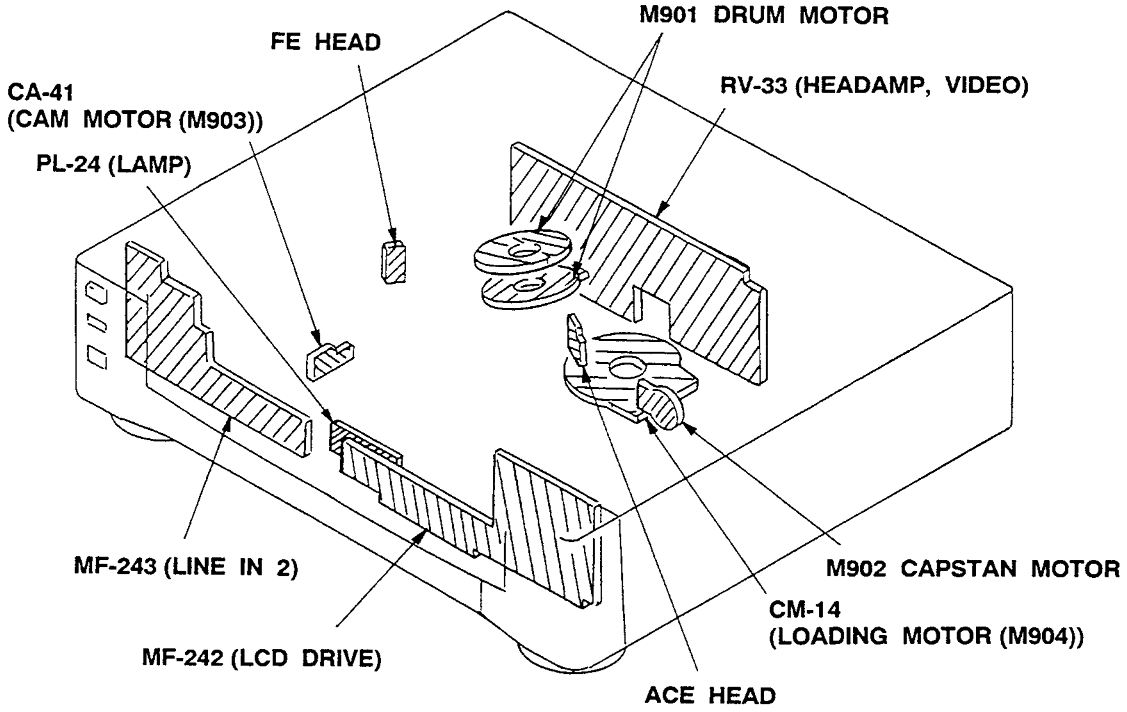
— Top Side —

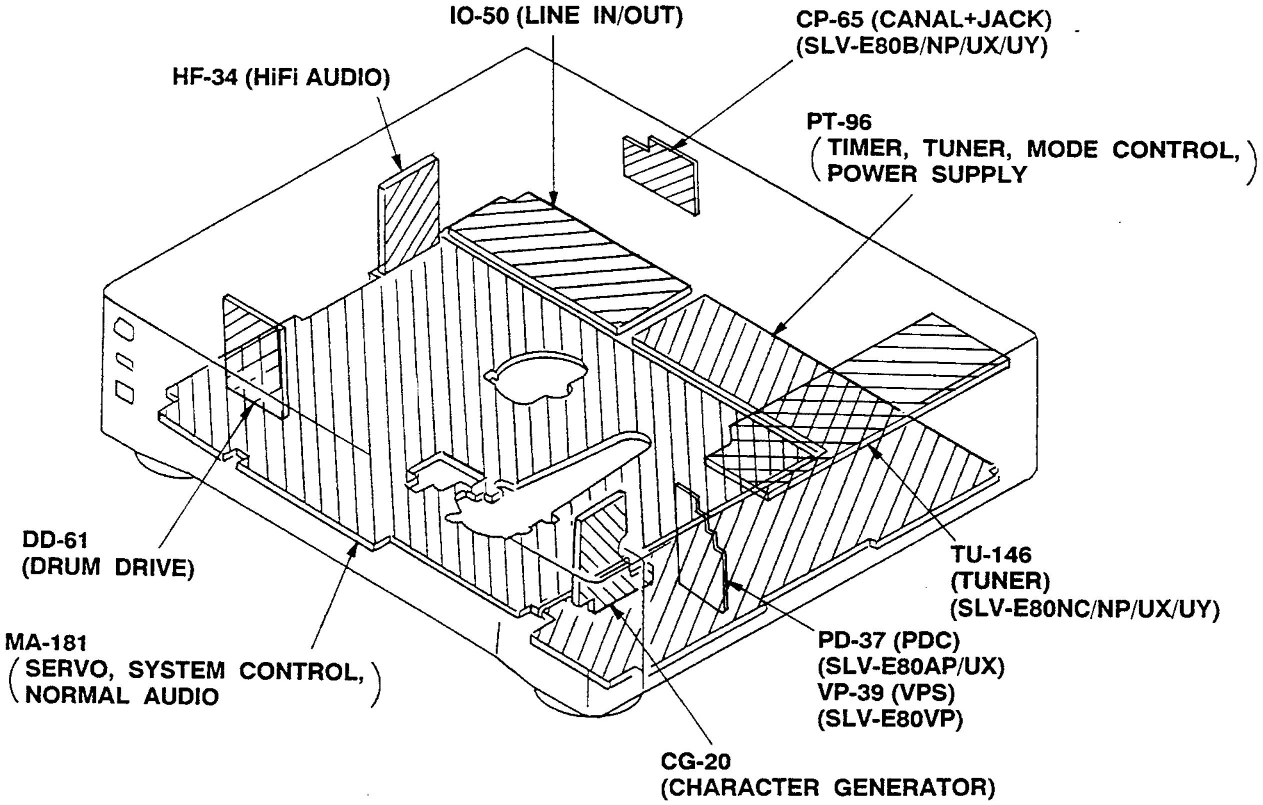

ACE head block ass'y
A-6761-129-C
Upper drum ass'y
DZR-60-R 1-550-872-11
Lower drum ass'y
DZL-60A-R 1-550-873-11
M904
Loading motor
X-3727-784-1
FE head
1-543-647-11
Q001
Tape top sensor
8-729-926-31
Q002
Tape end sensor
8-729-926-31
D001
Tape top/end LED
8-719-985-00

— Bottom Side —


M902
Capstan motor
8-835-489-11
M901
Drum motor
M903
Cam motor
X-3733-302-1
S1
Rotary switch
1-571-920-11
Timing belt
3-736-013-01

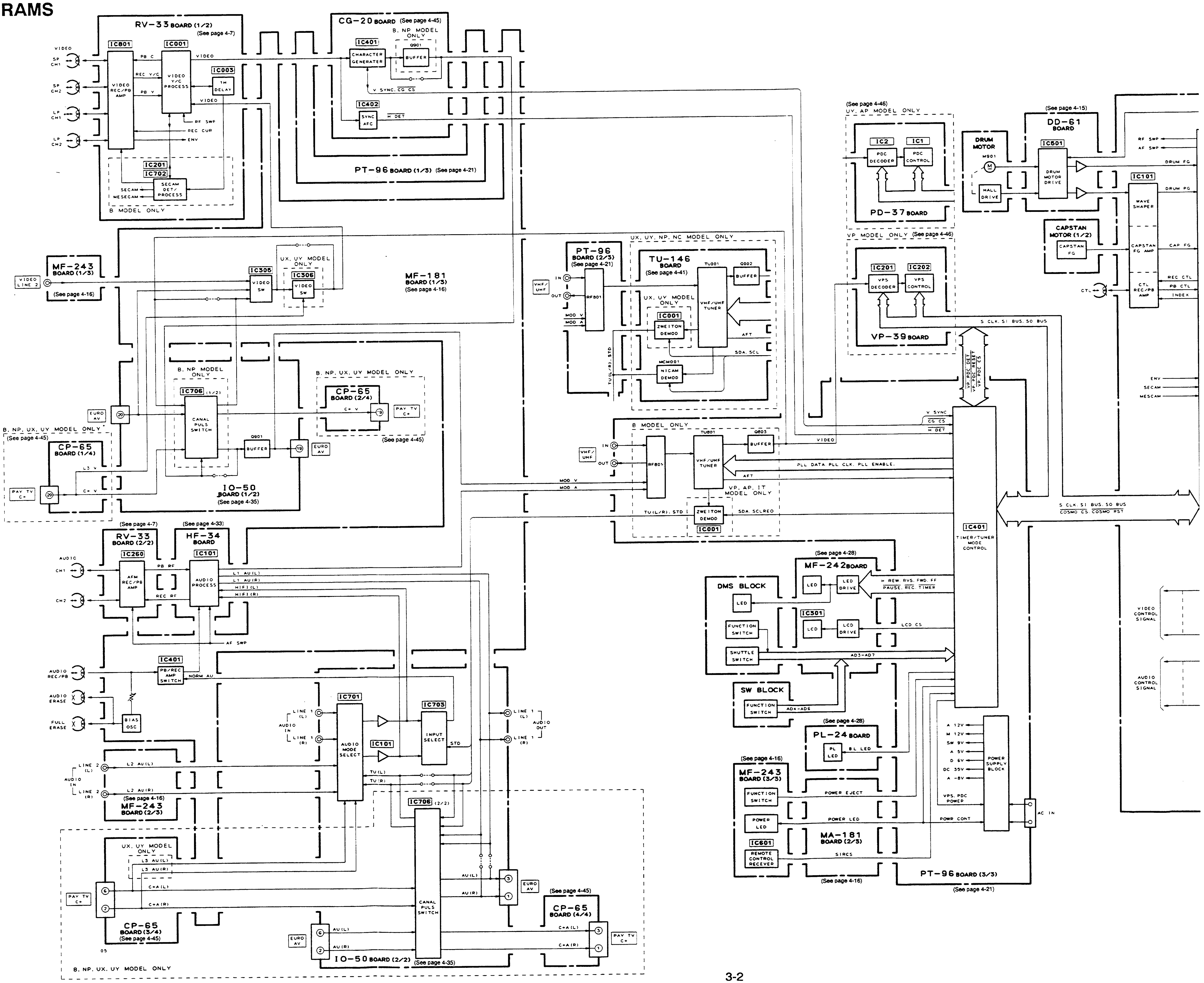
2-11. CIRCUIT BOARDS LOCATION

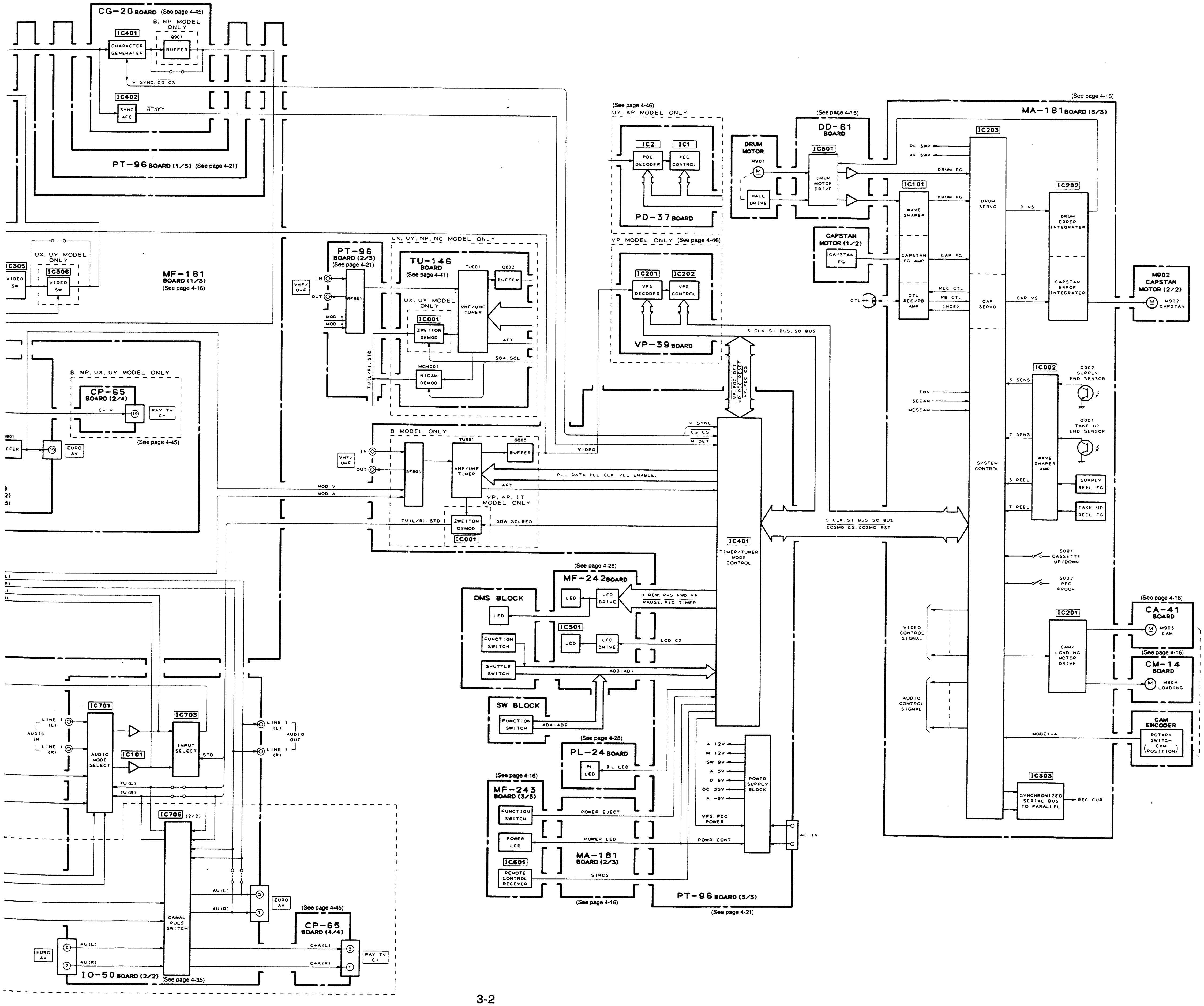

FE HEAD
M901 DRUM MOTOR
CA-41
(CAM MOTOR (M903))
RV-33 (HEADAMP, VIDEO)
PL-24 (LAMP)
MF-243 (LINE IN 2)
M902 CAPSTAN MOTOR
CM-14
(LOADING MOTOR (M904))
MF-242 (LCD DRIVE)
ACE HEAD


IO-50 (LINE IN/OUT)
CP-65 (CANAL+JACK)
(SLV-E80B/NP/UX/UY)
HF-34 (HiFi AUDIO)
PT-96
(TIMER, TUNER, MODE CONTROL, POWER SUPPLY)
DD-61
(DRUM DRIVE)
TU-146
(TUNER)
(SLV-E80NC/NP/UX/UY)
MA-181
(SERVO, SYSTEM CONTROL, NORMAL AUDIO)
PD-37 (PDC)
(SLV-E80AP/UX)
VP-39 (VPS)
(SLV-E80VP)
CG-20
(CHARACTER GENERATOR)

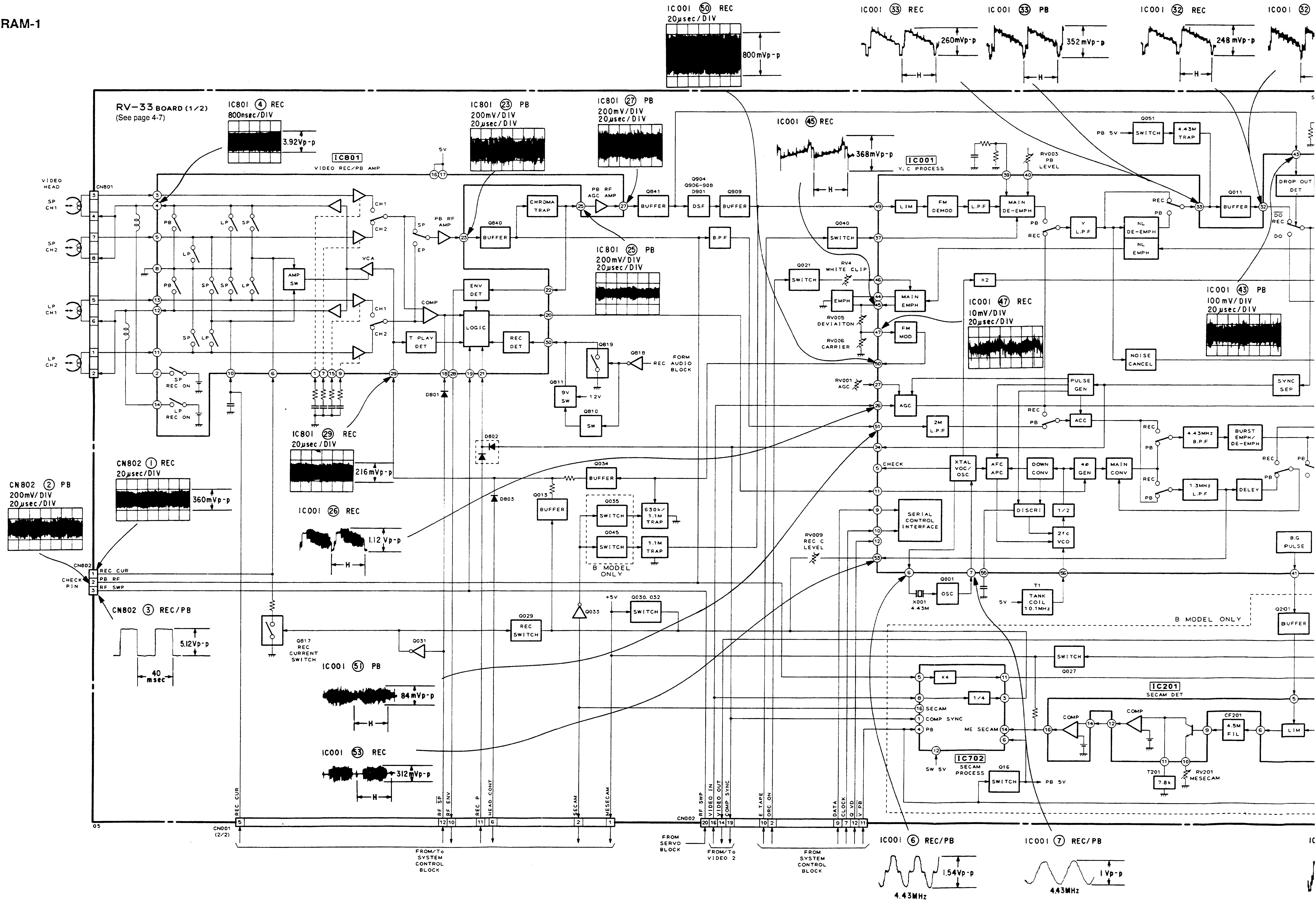
SECTION 3
BLOCK DIAGRAMS

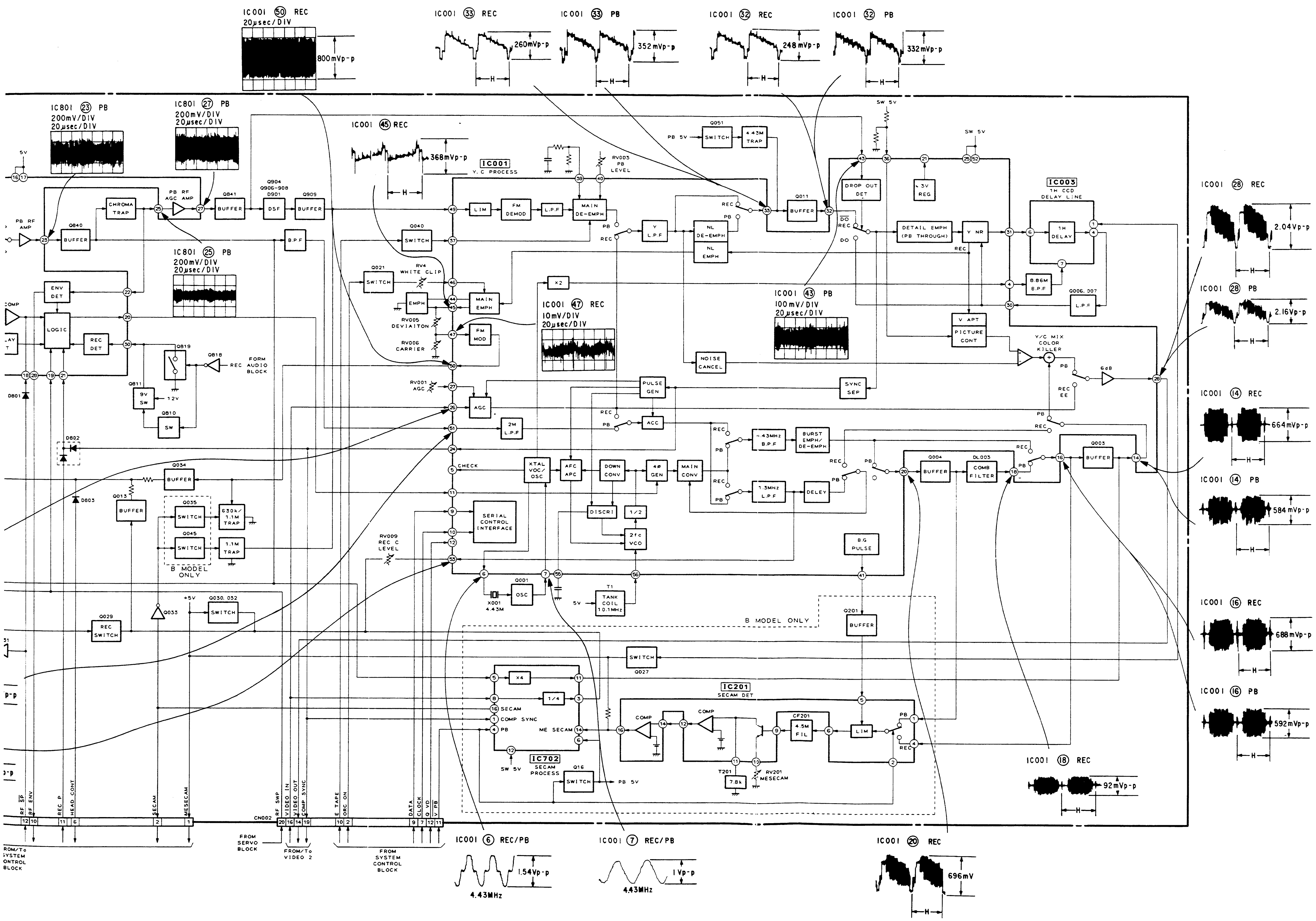
3-1. OVERALL BLOCK DIAGRAM


RV-33 BOARD (1/2)
(See page 4-7)
IC801
VIDEO REC/PB AMP
IC001
VIDEO Y/C PROCESS
IC003
1H DELAY
IC201
IC702
SECAM DET/PROCESS
SECAM
MESECAM
B MODEL ONLY
VIDEO SP CH1
SP CH2
LP CH1
LP CH2
PB C
REC Y/C
PB Y
VIDEO
RF SWP
REC CUR
ENV
CG-20 BOARD (See page 4-45)
B, NP MODEL ONLY
IC401
CHARACTER GENERATER
Q901
BUFFER
V SYNC, CG CS
IC402
SYNC AFC
H DET
PT-96 BOARD (1/3) (See page 4-21)
MF-243 BOARD (1/3)
(See page 4-16)
VIDEO LINE 2
IC305
VIDEO SW
UX, UY MODEL ONLY
IC306
VIDEO SW
MF-181 BOARD (1/3)
(See page 4-16)
B, NP MODEL ONLY
IC706 (1/2)
CANAL PULS SWITCH
Q901
BUFFER
EURO AV
B, NP, UX, UY MODEL ONLY
CP-65 BOARD (2/4)
PAY TV C+
(See page 4-45)
CP-65 BOARD (1/4)
IO-50 BOARD (1/2)
(See page 4-35)
RV-33 BOARD (2/2)
(See page 4-7)
HF-34 BOARD
(See page 4-33)
IC260
AFM REC/PB AMP
IC101
AUDIO PROCESS
AUDIO CH1
CH2
PB RF
REC RF
L1 AU(L)
L1 AU(R)
HIFI(L)
HIFI(R)
AF SWP
IC401
PB/REC AMP SWITCH
NORM AU
AUDIO REC/PB
AUDIO ERASE
FULL ERASE
BIAS OSC
IC701
AUDIO MODE SELECT
IC101
IC703
INPUT SELECT
STD
LINE 1 (L)
LINE 1 (R)
AUDIO IN
AUDIO OUT
LINE 2 (L)
LINE 2 (R)
L2 AU(L)
L2 AU(R)
MF-243 BOARD (2/3)
(See page 4-16)
TU(L)
TU(R)
IC706 (2/2)
CANAL PULS SWITCH
UX, UY MODEL ONLY
L3 AU(L)
L3 AU(R)
C+A(L)
C+A(R)
CP-65 BOARD (3/4)
(See page 4-45)
AU(L)
AU(R)
CP-65 BOARD (4/4)
IO-50 BOARD (2/2) (See page 4-35)
B, NP, UX, UY MODEL ONLY
PT-96 BOARD (2/3)
(See page 4-21)
UX, UY, NP, NC MODEL ONLY
TU-146 BOARD
(See page 4-41)
VHF/UHF
IN
OUT
RF801
TU001
VHF/UHF TUNER
Q002
BUFFER
UX, UY MODEL ONLY
IC001
ZWEITON DEMOD
MCM001
NICAM DEMOD
AFT
SDA, SCL
MOD V
MOD A
TU(L/R), STD
B MODEL ONLY
TU801
Q803
BUFFER
VIDEO
PLL DATA, PLL CLK, PLL ENABLE
VP, AP, IT MODEL ONLY
ZWEITON DEMOD
IC001
SDA SCLREO
(See page 4-46)
UY, AP MODEL ONLY
IC2
PDC DECODER
IC1
PDC CONTROL
PD-37 BOARD
VP MODEL ONLY (See page 4-46)
IC201
VPS DECODER
IC202
VPS CONTROL
VP-39 BOARD
S CLK, SI BUS, SO BUS
VP, PDC DET
VP, PDC RESET
VP, PDC CS
DRUM MOTOR
M901
HALL DRIVE
DD-61 BOARD
(See page 4-15)
IC601
DRUM MOTOR DRIVE
CAPSTAN MOTOR (1/2)
CAPSTAN FG
IC101
WAVE SHAPER
CAPSTAN FG AMP
CTL REC/PB AMP
CTL
RF SWP
AF SWP
DRUM FG
DRUM PG
CAP FG
REC CTL
PB CTL
INDEX
ENV
SECAM
MESECAM
V SYNC
CG CS
H DET
S CLK, SI BUS, SO BUS
COSMO CS, COSMO RST
IC401
TIMER/TUNER MODE CONTROL
MF-242 BOARD
(See page 4-28)
DMS BLOCK
LED
LED DRIVE
H REW, RVS, FWD, FF
PAUSE, REC, TIMER
IC501
LCD
LCD DRIVE
LCD CS
FUNCTION SWITCH
SHUTTLE SWITCH
AD3-AD7
SW BLOCK
FUNCTION SWITCH
AD4-AD6
PL-24 BOARD
(See page 4-28)
PL LED
BL LED
MF-243 BOARD (3/3)
(See page 4-16)
POWER EJECT
POWER LED
POWR CONT
IC601
REMOTE CONTROL RECEVER
MA-181 BOARD (2/3)
SIRCS
(See page 4-16)
PT-96 BOARD (3/3)
(See page 4-21)
A 12V
M 12V
SW 9V
A 5V
D 6V
DC 35V
A -8V
VPS, PDC POWER
POWER SUPPLY BLOCK
AC IN
VIDEO CONTROL SIGNAL
AUDIO CONTROL SIGNAL


CG-20 BOARD (See page 4-45)
IC401
CHARACTER GENERATER
B, NP MODEL ONLY
Q901
BUFFER
V SYNC, CG CS
IC402
SYNC AFC
H DET
PT-96 BOARD (1/3) (See page 4-21)
UX, UY MODEL ONLY
IC305
VIDEO SW
IC306
VIDEO SW
MF-181 BOARD (1/3) (See page 4-16)
B, NP, UX, UY MODEL ONLY
CP-65 BOARD (2/4)
C+ V
PAY TV C+
(See page 4-45)
EURO AV
PT-96 BOARD (2/3) (See page 4-21)
UX, UY, NP, NC MODEL ONLY
TU-146 BOARD (See page 4-41)
TU001
Q002
BUFFER
VHF/UHF TUNER
VHF/UHF
IN
OUT
RF001
MOD V
MOD A
UX, UY MODEL ONLY
IC001
ZWEITON DEMOD
AFT
SDA, SCL
MCM001
NICAM DEMOD
TU(L/R), STD
B MODEL ONLY
TU001
Q603
BUFFER
VIDEO
RF801
VHF/UHF TUNER
PLL DATA, PLL CLK, PLL ENABLE
AFT
VP, AP, IT MODEL ONLY
ZWEITON DEMOD
IC001
TU(L/R), STD
SDA, SCLRED
(See page 4-46)
UX, AP MODEL ONLY
IC2
IC1
PDC DECODER
PDC CONTROL
PD-37 BOARD
VP MODEL ONLY (See page 4-46)
IC201
IC202
VPS DECODER
VPS CONTROL
VP-39 BOARD
S CLK, SI BUS, SO BUS
VP, PDC DET
VP, PDC RESET
VP, PDC CS
V SYNC
CG CS
H DET
DRUM MOTOR
M901
HALL DRIVE
(See page 4-15)
DD-61 BOARD
IC501
DRUM MOTOR DRIVE
CAPSTAN MOTOR (1/2)
CAPSTAN FG
CTL
(See page 4-16)
MA-181 BOARD (3/3)
IC203
RF SWP
AF SWP
DRUM FG
DRUM PG
IC101
WAVE SHAPER
CAPSTAN FG AMP
CTL REC/PB AMP
CAP FG
REC CTL
PB CTL
INDEX
DRUM SERVO
CAP SERVO
D VS
CAP VS
IC202
DRUM ERROR INTEGRATER
CAPSTAN ERROR INTEGRATER
M902 CAPSTAN MOTOR (2/2)
M902 CAPSTAN
IC002
Q002 SUPPLY END SENSOR
Q001 TAKE UP END SENSOR
S SENS
T SENS
S REEL
T REEL
WAVE SHAPER AMP
SUPPLY REEL FG
TAKE UP REEL FG
ENV
SECAM
MESCAM
SYSTEM CONTROL
S CLK, SI BUS, SO BUS
COSMO CS, COSMO RST
IC401
TIMER/TUNER MODE CONTROL
S001 CASSETTE UP/DOWN
S002 REC PROOF
VIDEO CONTROL SIGNAL
AUDIO CONTROL SIGNAL
IC201
CAM/LOADING MOTOR DRIVE
(See page 4-16)
CA-41 BOARD
M903 CAM
(See page 4-16)
CM-14 BOARD
M904 LOADING
CAM ENCODER
ROTARY SWITCH (CAM POSITION)
MODE1-4
IC303
SYNCHRONIZED SERIAL BUS TO PARALLEL
REC CUR
(See page 4-28)
MF-242 BOARD
LED
LED DRIVE
H REW, RVS, FWD, FF
PAUSE, REC TIMER
DMS BLOCK
LED
FUNCTION SWITCH
SHUTTLE SWITCH
IC301
LCD
LCD DRIVE
LCD CS
AD3-AD7
SW BLOCK
FUNCTION SWITCH
AD4-AD6
(See page 4-28)
PL-24 BOARD
PL LED
BL LED
(See page 4-16)
MF-243 BOARD (3/3)
FUNCTION SWITCH
POWER EJECT
POWER LED
POWER LED
IC601
REMOTE CONTROL RECEVER
MA-181 BOARD (2/3)
SIRCS
(See page 4-16)
PT-96 BOARD (3/3)
(See page 4-21)
A 12V
M 12V
SW 9V
A 5V
D 6V
DC 35V
A -8V
VPS, PDC POWER
POWR CONT
POWER SUPPLY BLOCK
AC IN
IC701
LINE 1 (L)
AUDIO IN
LINE 1 (R)
AUDIO MODE SELECT
IC703
INPUT SELECT
STD
IC101
TU(L)
TU(R)
LINE 1 (L)
AUDIO OUT
LINE 1 (R)
IC706 (2/2)
CANAL PULS SWITCH
AU(L)
AU(R)
EURO AV
(See page 4-45)
CP-65 BOARD (4/4)
C+A(L)
C+A(R)
PAY TV C+
EURO AV
AU(L)
AU(R)
IO-50 BOARD (2/2)
(See page 4-35)

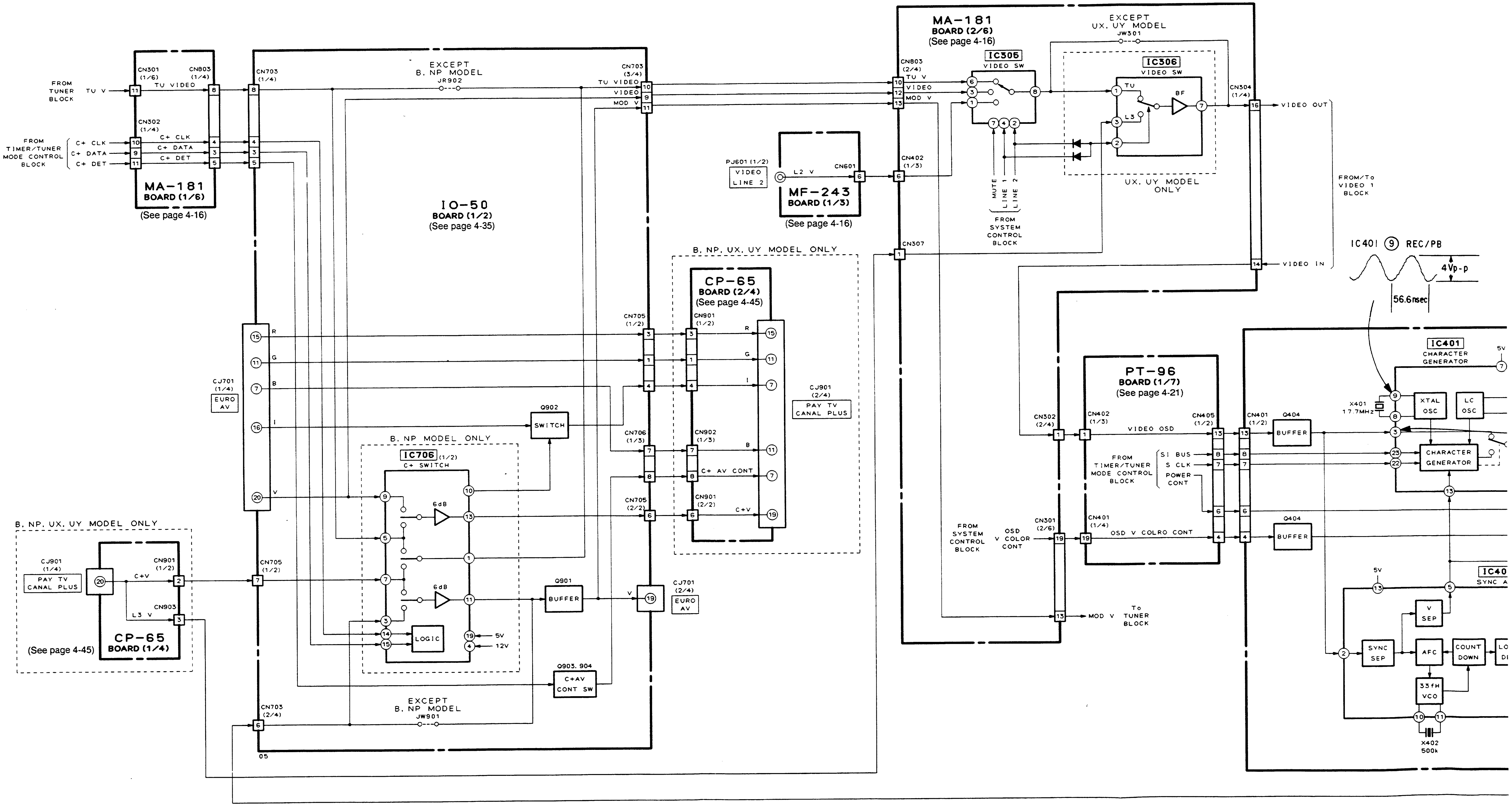
3-2. VIDEO BLOCK DIAGRAM-1


RV-33 BOARD (1/2)
(See page 4-7)
IC801 VIDEO REC/PB AMP
IC001 Y, C PROCESS
IC702 SECAM PROCESS
IC201 SECAM DET
VIDEO HEAD
SP CH1
SP CH2
LP CH1
LP CH2
CN801
CN802
CHECK PIN
REC CUR
PB RF
RF SWP
IC801 (4) REC 800nsec/DIV 3.92Vp-p
IC801 (23) PB 200mV/DIV 20μsec/DIV
IC801 (27) PB 200mV/DIV 20μsec/DIV
IC801 (25) PB 200mV/DIV 20μsec/DIV
IC801 (29) REC 20μsec/DIV 216mVp-p
CN802 (1) REC 20μsec/DIV 360mVp-p
CN802 (2) PB 200mV/DIV 20μsec/DIV
CN802 (3) REC/PB 5.12Vp-p 40 msec
IC001 (26) REC 1.12Vp-p H
IC001 (51) PB 84mVp-p H
IC001 (53) REC 312mVp-p H
IC001 (50) REC 20μsec/DIV 800mVp-p
IC001 (33) REC 260mVp-p H
IC001 (33) PB 352mVp-p H
IC001 (32) REC 248mVp-p H
IC001 (45) REC 368mVp-p H
IC001 (47) REC 10mV/DIV 20μsec/DIV
IC001 (43) PB 100mV/DIV 20μsec/DIV
IC001 (6) REC/PB 1.54Vp-p 4.43MHz
IC001 (7) REC/PB 1Vp-p 4.43MHz
PB SP LP
AMP SW
VCA
CH1 CH2
COMP
T PLAY DET
ENV DET
LOGIC
REC DET
PB RF AMP
Q840 BUFFER
CHROMA TRAP
PB RF AGC AMP
Q841 BUFFER
Q904 Q906-908 Q901 DSF
Q909 BUFFER
B.P.F
SP REC ON
LP REC ON
D801 D802 D803
Q819 Q818 FORM AUDIO BLOCK
Q811 9V SW 12V
Q810 SW
Q034 BUFFER
Q013 BUFFER
Q035 SWITCH 630k/1.1M TRAP
Q045 SWITCH 1.1M TRAP
B MODEL ONLY
Q817 REC CURRENT SWITCH
Q031
Q029 REC SWITCH
+5V Q033
Q030, 032 SWITCH
LIM
FM DEMOD
L.P.F
MAIN DE-EMPH
RV003 PB LEVEL
Q040 SWITCH
Q021 SWITCH
RV4 WHITE CLIP
EMPH
MAIN EMPH
RV005 DEVIAITON
FM MOD
RV006 CARRIER
RV001 AGC
AGC
2M L.P.F
XTAL VCO/OSC
AFC APC
DOWN CONV
4φ GEN
MAIN CONV
SERIAL CONTROL INTERFACE
DISCRI
1/2
2fc VCO
RV009 REC C LEVEL
PULSE GEN
ACC
x2
Y L.P.F
NL DE-EMPH
NL EMPH
NOISE CANCEL
Q051 SWITCH 4.43M TRAP
PB 5V
Q011 BUFFER
DROP OUT DET
DO
SYNC SEP
4.43MHz B.P.F
BURST EMPH/DE-EMPH
1.3MHz L.P.F
DELEY
B.G PULSE
Q001 OSC
X001 4.43M
T1 TANK COIL 10.1MHz
Q201 BUFFER
Q027 SWITCH
x4
1/4
SECAM
COMP SYNC
PB
ME SECAM
SW 5V
Q16 SWITCH
COMP
CF201 4.5M FIL
LIM
T201 7.8k
RV201 MESECAM
CN001 (2/2)
REC CUR
RF SP
RF ENV
REC P
HEAD CONT
SECAM
MESECAM
FROM/TO SYSTEM CONTROL BLOCK
CN002
RF SWP
VIDEO IN
VIDEO OUT
COMP SYNC
E TAPE
ORC ON
DATA
CLOCK
Q VD
V PB
FROM SERVO BLOCK
FROM/TO VIDEO 2
FROM SYSTEM CONTROL BLOCK

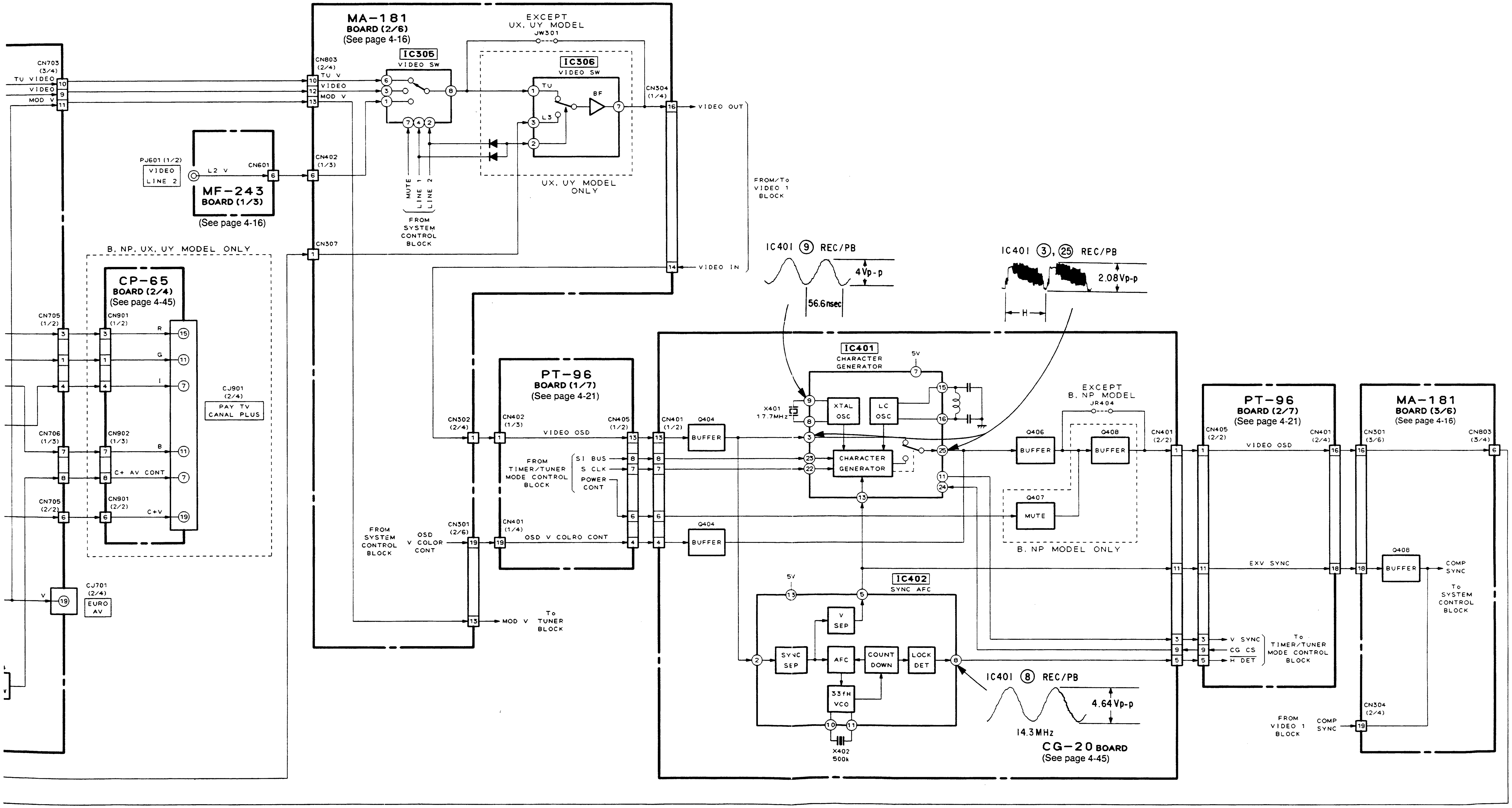


IC001 (50) REC
20μsec/DIV
800mVp-p
IC001 (33) REC
260mVp-p
IC001 (33) PB
352mVp-p
IC001 (32) REC
248mVp-p
IC001 (32) PB
332mVp-p
H
IC801 (23) PB
200mV/DIV
20μsec/DIV
IC801 (27) PB
200mV/DIV
20μsec/DIV
IC801 (25) PB
200mV/DIV
20μsec/DIV
IC001 (45) REC
368mVp-p
IC001
Y.C PROCESS
IC001 (47) REC
10mV/DIV
20μsec/DIV
IC001 (43) PB
100mV/DIV
20μsec/DIV
IC003
1H CCD DELAY LINE
1H DELAY
IC001 (28) REC
2.04Vp-p
IC001 (28) PB
2.16Vp-p
IC001 (14) REC
664mVp-p
IC001 (14) PB
584mVp-p
IC001 (16) REC
688mVp-p
IC001 (16) PB
592mVp-p
IC001 (18) REC
92mVp-p
IC001 (20) REC
696mV
IC001 (6) REC/PB
1.54Vp-p
4.43MHz
IC001 (7) REC/PB
1Vp-p
4.43MHz
PB RF AMP
Q840 BUFFER
CHROMA TRAP
PB RF AGC AMP
Q841 BUFFER
Q904 Q906-908 D901 DSF
Q909 BUFFER
B.P.F
ENV DET
LOGIC
REC DET
COMP
Q819
Q818
FORM AUDIO BLOCK
REC
Q811 9V SW
12V
Q810 SW
D801
D802
D803
Q034 BUFFER
Q013 BUFFER
Q035 SWITCH
630k/1.1M TRAP
Q045 SWITCH
1.1M TRAP
B MODEL ONLY
Q033
+5V
Q030, 032 SWITCH
Q029 REC SWITCH
5V
Q040 SWITCH
Q021 SWITCH
RV4 WHITE CLIP
EMPH
MAIN EMPH
RV005 DEVIAITON
RV006 CARRIER
FM MOD
LIM
FM DEMOD
L.P.F
MAIN DE-EMPH
RV003 PB LEVEL
Y L.P.F
NL DE-EMPH
NL EMPH
Q051 SWITCH
4.43M TRAP
PB 5V
SW 5V
Q011 BUFFER
DROP OUT DET
DO
5V REG
DETAIL EMPH (PB THROUGH)
Y NR
8.86M B.P.F
Q006, 007 L.P.F
V APT PICTURE CONT
Y/C MIX COLOR KILLER
6dB
NOISE CANCEL
×2
PULSE GEN
SYNC SEP
RV001 AGC
AGC
2M L.P.F
ACC
CHECK
XTAL VCO/OSC
AFC APC
DOWN CONV
4ϕ GEN
MAIN CONV
4.43MHz B.P.F
BURST EMPH/DE-EMPH
1.3MHz L.P.F
DELEY
Q004 BUFFER
DL003 COMB FILTER
Q003 BUFFER
SERIAL CONTROL INTERFACE
DISCRI
1/2
2fc VCO
RV009 REC C LEVEL
B.G PULSE
Q001 OSC
X001 4.43M
T1 TANK COIL 10.1MHz
Q201 BUFFER
B MODEL ONLY
SWITCH Q027
×4
1/4
SECAM
COMP SYNC
PB
ME SECAM
IC702 SECAM PROCESS
Q16 SWITCH
PB 5V
SW 5V
IC201 SECAM DET
COMP
CF201 4.5M FIL
LIM
T201 7.8k
RV201 MESECAM
REC
PB
EE
RF SP
RF ENV
REC P
HEAD CONT
SECAM
MESECAM
RF SWP
VIDEO IN
VIDEO OUT
COMP SYNC
E TAPE
ORC ON
DATA
CLOCK
V VD
PB
CN002
FROM SERVO BLOCK
FROM/To VIDEO 2
FROM SYSTEM CONTROL BLOCK
ROM/To SYSTEM CONTROL BLOCK

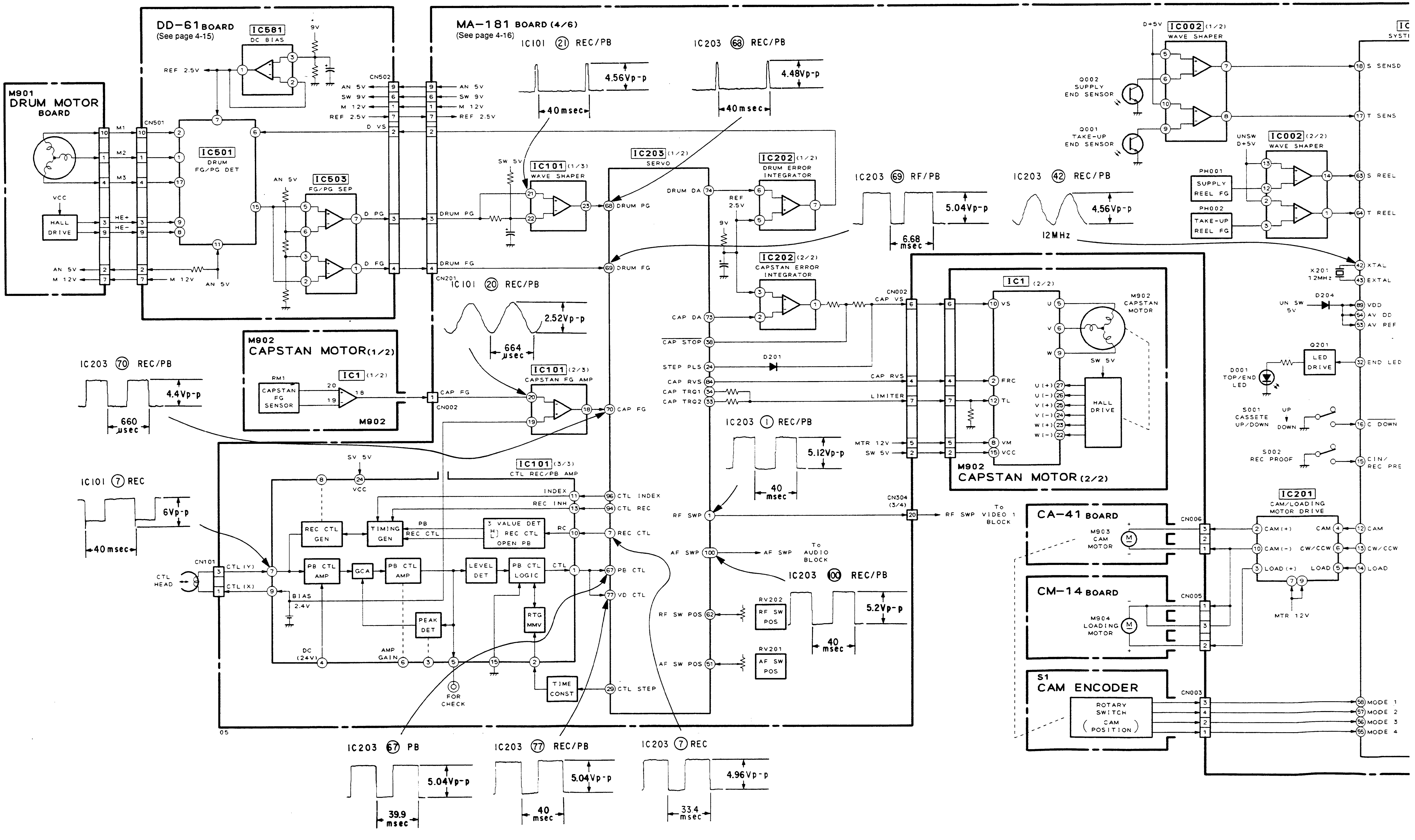
3-3. VIDEO BLOCK DIAGRAM-2

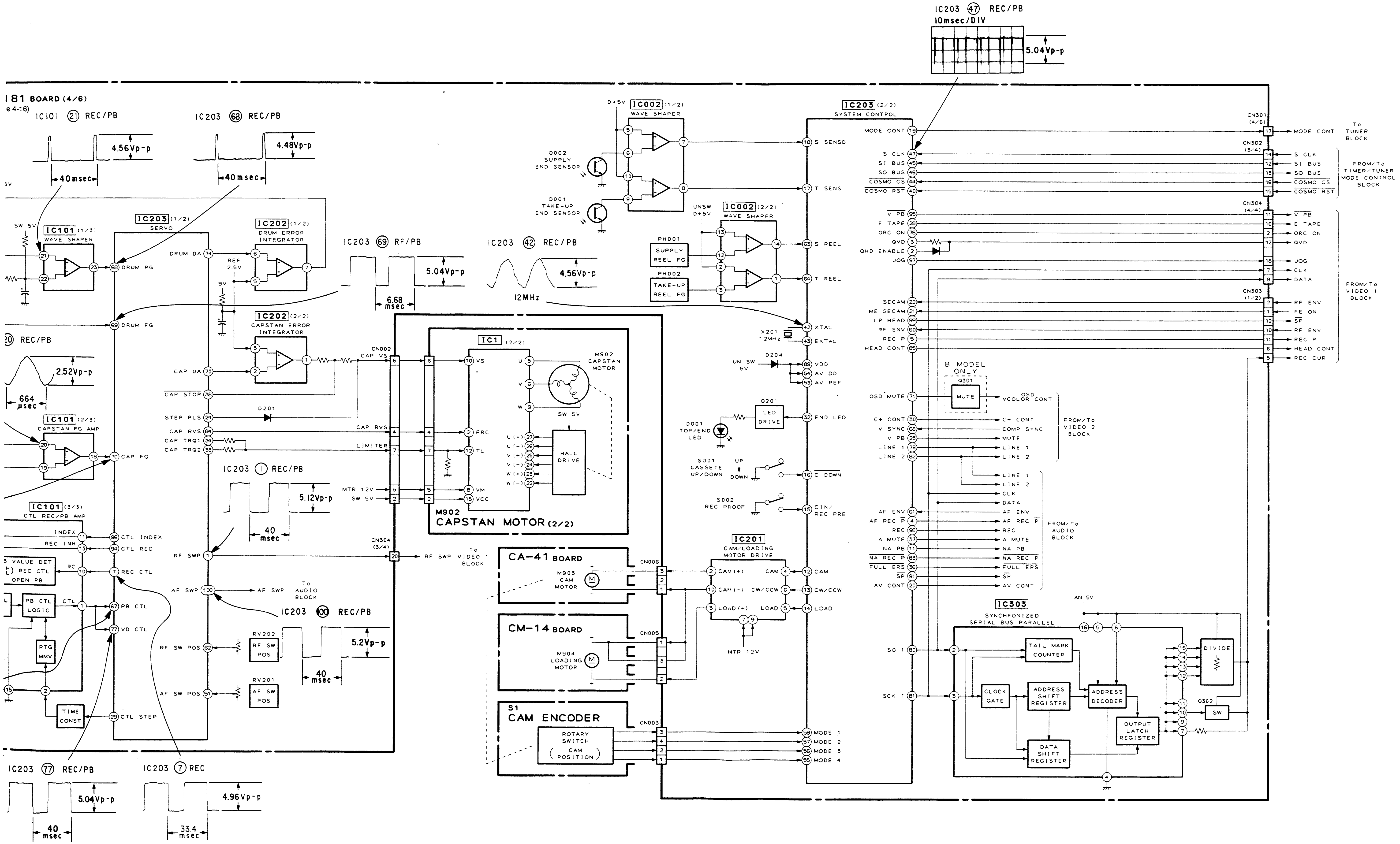


FROM TUNER BLOCK
TU V
CN301 (1/6)
CN803 (1/4)
TU VIDEO
CN302 (1/4)
FROM TIMER/TUNER MODE CONTROL BLOCK
C+ CLK
C+ DATA
C+ DET
MA-181 BOARD (1/6)
(See page 4-16)
CN703 (1/4)
EXCEPT B. NP MODEL
JR902
CN703 (3/4)
TU VIDEO
VIDEO
MOD V
IO-50 BOARD (1/2)
(See page 4-35)
CJ701 (1/4)
EURO AV
R
G
B
I
V
Q902
SWITCH
B. NP MODEL ONLY
IC706 (1/2)
C+ SWITCH
6dB
LOGIC
5V
12V
Q901
BUFFER
Q903, 904
C+AV CONT SW
EXCEPT B. NP MODEL
JW901
CN703 (2/4)
CN705 (1/2)
CN706 (1/3)
CN705 (2/2)
CJ701 (2/4)
EURO AV
05
B. NP, UX, UY MODEL ONLY
CJ901 (1/4)
PAY TV CANAL PLUS
CN901 (1/2)
C+V
CN903
L3 V
CP-65 BOARD (1/4)
(See page 4-45)
B. NP, UX, UY MODEL ONLY
CP-65 BOARD (2/4)
(See page 4-45)
CN901 (1/2)
CN902 (1/3)
C+ AV CONT
CN901 (2/2)
C+V
CJ901 (2/4)
PAY TV CANAL PLUS
PJ601 (1/2)
VIDEO LINE 2
L2 V
CN601
MF-243 BOARD (1/3)
(See page 4-16)
MA-181 BOARD (2/6)
(See page 4-16)
CN803 (2/4)
TU V
VIDEO
MOD V
IC305
VIDEO SW
EXCEPT UX, UY MODEL
JW301
IC306
VIDEO SW
TU
L3
BF
UX, UY MODEL ONLY
CN304 (1/4)
VIDEO OUT
VIDEO IN
FROM/TO VIDEO 1 BLOCK
CN402 (1/3)
MUTE
LINE 1
LINE 2
FROM SYSTEM CONTROL BLOCK
CN307
IC401 ⑨ REC/PB
4Vp-p
56.6nsec
CN302 (2/4)
PT-96 BOARD (1/7)
(See page 4-21)
CN402 (1/3)
VIDEO OSD
CN405 (1/2)
FROM TIMER/TUNER MODE CONTROL BLOCK
SI BUS
S CLK
POWER CONT
CN401 (1/4)
OSD V COLRO CONT
FROM SYSTEM CONTROL BLOCK
OSD V COLOR CONT
CN301 (2/6)
MOD V
To TUNER BLOCK
CN401 (1/2)
Q404
BUFFER
IC401
CHARACTER GENERATOR
5V
X401 17.7MHz
XTAL OSC
LC OSC
CHARACTER GENERATOR
IC40
SYNC A
V SEP
SYNC SEP
AFC
COUNT DOWN
32fH VCO
X402 500k

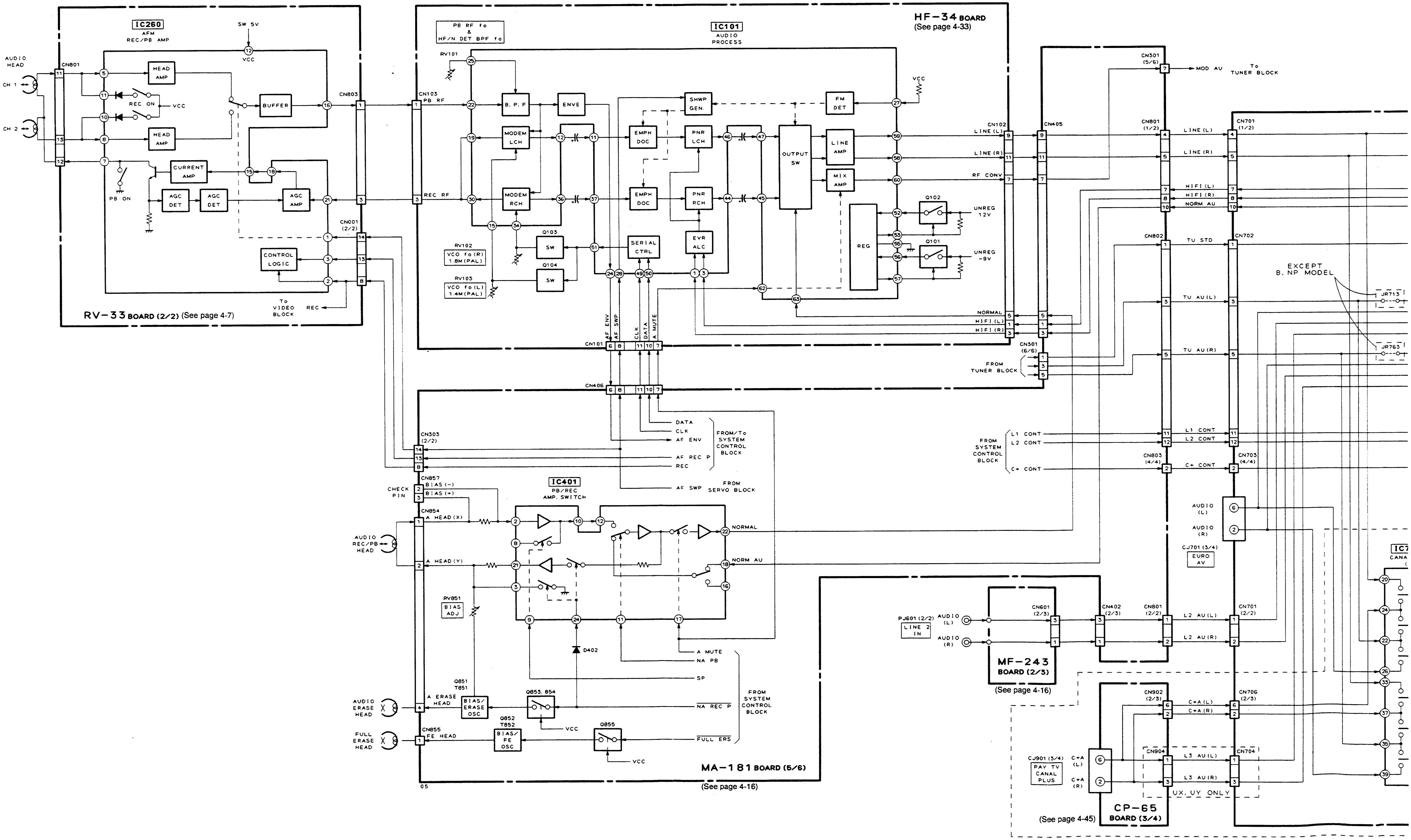

MA-181
BOARD (2/6)
(See page 4-16)
EXCEPT UX, UY MODEL
JW301
IC305
VIDEO SW
IC306
VIDEO SW
TU
BF
L3
UX, UY MODEL ONLY
CN703 (3/4)
TU VIDEO
VIDEO
MOD V
CN803 (2/4)
TU V
VIDEO
MOD V
CN304 (1/4)
VIDEO OUT
VIDEO IN
FROM/TO VIDEO 1 BLOCK
PJ601 (1/2)
VIDEO LINE 2
L2 V
CN601
MF-243
BOARD (1/3)
(See page 4-16)
CN402 (1/3)
CN307
MUTE
LINE 1
LINE 2
FROM SYSTEM CONTROL BLOCK
B, NP, UX, UY MODEL ONLY
CP-65
BOARD (2/4)
(See page 4-45)
CN705 (1/2)
CN901 (1/2)
R
G
I
CJ901 (2/4)
PAY TV CANAL PLUS
CN706 (1/3)
CN902 (1/3)
B
C+ AV CONT
CN705 (2/2)
CN901 (2/2)
C+V
CJ701 (2/4)
EURO AV
V
IC401 ⑨ REC/PB
4Vp-p
56.6nsec
IC401 ③, ㉕ REC/PB
2.08Vp-p
H
PT-96
BOARD (1/7)
(See page 4-21)
CN302 (2/4)
CN402 (1/3)
CN405 (1/2)
VIDEO OSD
FROM TIMER/TUNER MODE CONTROL BLOCK
SI BUS
S CLK
POWER CONT
FROM SYSTEM CONTROL BLOCK
OSD V COLOR CONT
CN301 (2/6)
CN401 (1/4)
OSD V COLRO CONT
MOD V
To TUNER BLOCK
IC401
CHARACTER GENERATOR
5V
X401 17.7MHz
XTAL OSC
LC OSC
CN401 (1/2)
Q404
BUFFER
CHARACTER GENERATOR
EXCEPT B, NP MODEL
JR404
Q406
BUFFER
Q408
BUFFER
Q407
MUTE
B, NP MODEL ONLY
IC402
SYNC AFC
5V
V SEP
SYNC SEP
AFC
COUNT DOWN
LOCK DET
33fH VCO
X402 500k
IC401 ⑧ REC/PB
4.64Vp-p
14.3MHz
CG-20 BOARD
(See page 4-45)
CN401 (2/2)
PT-96
BOARD (2/7)
(See page 4-21)
CN405 (2/2)
CN401 (2/4)
VIDEO OSD
EXV SYNC
V SYNC
CG CS
H DET
To TIMER/TUNER MODE CONTROL BLOCK
MA-181
BOARD (3/6)
(See page 4-16)
CN301 (3/6)
CN803 (3/4)
Q408
BUFFER
COMP SYNC
To SYSTEM CONTROL BLOCK
CN304 (2/4)
FROM VIDEO 1 BLOCK
COMP SYNC

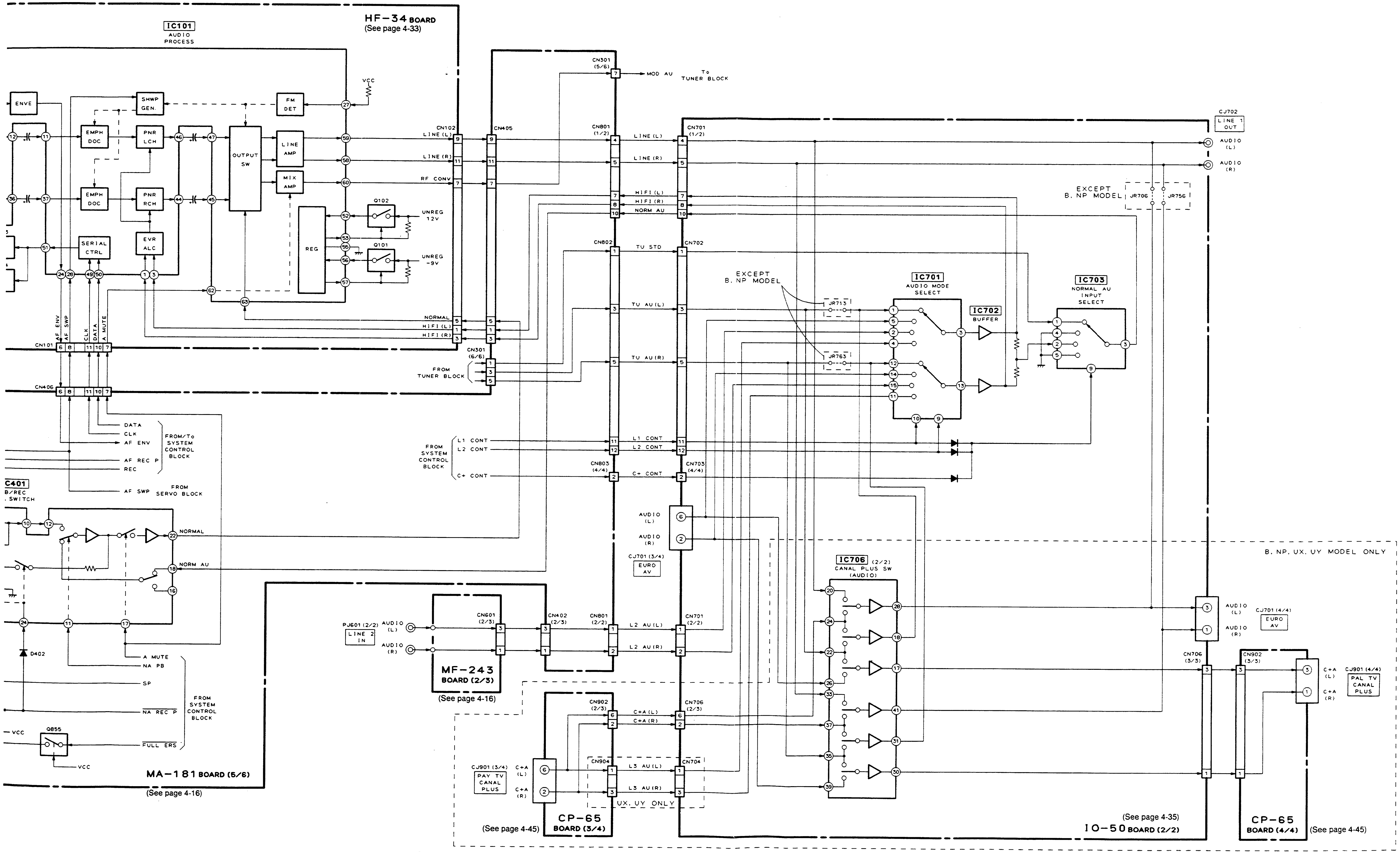
3-4. SERVO, SYSTEM CONTROL BLOCK DIAGRAM


M901
DRUM MOTOR
BOARD
HALL DRIVE
VCC
M1
M2
M3
HE+
HE−
AN 5V
M 12V
DD-61 BOARD
(See page 4-15)
IC581
DC BIAS
9V
REF 2.5V
CN501
IC501
DRUM FG/PG DET
IC503
FG/PG SEP
AN 5V
D PG
D FG
CN502
AN 5V
SW 9V
M 12V
REF 2.5V
D VS
M902
CAPSTAN MOTOR(1/2)
RM1
CAPSTAN FG SENSOR
IC1 (1/2)
MA-181 BOARD (4/6)
(See page 4-16)
IC101 ㉑ REC/PB
4.56Vp-p
40msec
IC203 (68) REC/PB
4.48Vp-p
40msec
SW 5V
IC101 (1/3)
WAVE SHAPER
DRUM PG
DRUM FG
CN201
IC101 ⑳ REC/PB
2.52Vp-p
664 μsec
IC101 (2/3)
CAPSTAN FG AMP
CAP FG
CN002
IC203 (1/2)
SERVO
DRUM DA
DRUM PG
DRUM FG
CAP FG
CAP DA
CAP STOP
STEP PLS
CAP RVS
CAP TRQ1
CAP TRQ2
IC202 (1/2)
DRUM ERROR INTEGRATOR
REF 2.5V
9V
IC202 (2/2)
CAPSTAN ERROR INTEGRATOR
D201
IC203 (69) RF/PB
5.04Vp-p
6.68 msec
IC203 (42) REC/PB
4.56Vp-p
12MHz
IC203 ① REC/PB
5.12Vp-p
40 msec
IC203 ⑦⓪ REC/PB
4.4Vp-p
660 μsec
IC101 ⑦ REC
6Vp-p
40msec
CTL HEAD
CN101
CTL (Y)
CTL (X)
BIAS 2.4V
SV 5V
VCC
IC101 (3/3)
CTL REC/PB AMP
INDEX
REC INH
REC CTL GEN
TIMING GEN
PB
REC CTL
3 VALUE DET
H REC CTL
L OPEN PB
RC
PB CTL AMP
GCA
PB CTL AMP
LEVEL DET
PB CTL LOGIC
CTL
PEAK DET
RTG MMV
DC (24V)
AMP GAIN
FOR CHECK
TIME CONST
CTL INDEX
CTL REC
REC CTL
PB CTL
VD CTL
CTL STEP
RF SWP
AF SWP
To AUDIO BLOCK
IC203 (100) REC/PB
RF SW POS
RV202
RF SW POS
5.2Vp-p
40 msec
AF SW POS
RV201
AF SW POS
CN304 (3/4)
RF SWP
To VIDEO 1 BLOCK
05
IC203 (67) PB
5.04Vp-p
39.9 msec
IC203 (77) REC/PB
5.04Vp-p
40 msec
IC203 ⑦ REC
4.96Vp-p
33.4 msec
CN002
CAP VS
CAP RVS
LIMITER
MTR 12V
SW 5V
IC1 (2/2)
VS
FRC
TL
VM
VCC
U
V
W
U(+)
U(−)
V(+)
V(−)
W(+)
W(−)
SW 5V
HALL DRIVE
M902
CAPSTAN MOTOR
M902
CAPSTAN MOTOR(2/2)
CA-41 BOARD
M903 CAM MOTOR
CN006
CM-14 BOARD
M904 LOADING MOTOR
CN005
S1
CAM ENCODER
ROTARY SWITCH
(CAM POSITION)
CN003
D+5V
IC002 (1/2)
WAVE SHAPER
Q002 SUPPLY END SENSOR
Q001 TAKE-UP END SENSOR
UNSW D+5V
IC002 (2/2)
WAVE SHAPER
PH001
SUPPLY REEL FG
PH002
TAKE-UP REEL FG
S SENS
T SENS
S REEL
T REEL
X201 12MHz
XTAL
EXTAL
D204
UN SW 5V
VDD
AV DD
AV REF
Q201
LED DRIVE
END LED
D001
TOP/END LED
S001
CASSETE UP/DOWN
UP
DOWN
C DOWN
S002
REC PROOF
CIN/ REC PRE
IC201
CAM/LOADING MOTOR DRIVE
CAM(+)
CAM
CAM(−)
CW/CCW
LOAD(+)
LOAD
MTR 12V
CAM
CW/CCW
LOAD
MODE 1
MODE 2
MODE 3
MODE 4
IC
SYST


181 BOARD (4/6)
e 4-16)
IC101 (21) REC/PB
4.56Vp-p
40msec
IC203 (68) REC/PB
4.48Vp-p
40msec
IC203 (47) REC/PB
10msec/DIV
5.04Vp-p
IC101 (1/3) WAVE SHAPER
IC101 (2/3) CAPSTAN FG AMP
IC101 (3/3) CTL REC/PB AMP
IC203 (1/2) SERVO
DRUM DA
DRUM PG
DRUM FG
CAP DA
CAP STOP
STEP PLS
CAP RVS
CAP TRQ1
CAP TRQ2
CAP FG
CTL INDEX
CTL REC
REC CTL
PB CTL
VD CTL
CTL STEP
RF SWP
AF SWP
RF SW POS
AF SW POS
IC202 (1/2) DRUM ERROR INTEGRATOR
IC202 (2/2) CAPSTAN ERROR INTEGRATOR
REF 2.5V
9V
SW 5V
(20) REC/PB
2.52Vp-p
664 μsec
INDEX
REC INH
VALUE DET
REC CTL
OPEN PB
PB CTL LOGIC
RTG MMV
TIME CONST
IC203 (69) RF/PB
5.04Vp-p
6.68 msec
IC203 (42) REC/PB
4.56Vp-p
12MHz
IC203 (1) REC/PB
5.12Vp-p
40 msec
IC203 (100) REC/PB
5.2Vp-p
40 msec
RV202 RF SW POS
RV201 AF SW POS
IC203 (77) REC/PB
5.04Vp-p
40 msec
IC203 (7) REC
4.96Vp-p
33.4 msec
D201
CN002
CAP VS
CAP RVS
LIMITER
MTR 12V
SW 5V
CN304 (3/4)
RF SWP
To VIDEO 1 BLOCK
To AUDIO BLOCK
IC1 (2/2)
VS
FRC
TL
VM
VCC
U V W
U(+) U(-) V(+) V(-) W(+) W(-)
HALL DRIVE
M902 CAPSTAN MOTOR
M902 CAPSTAN MOTOR (2/2)
CA-41 BOARD
M903 CAM MOTOR
CN006
CM-14 BOARD
M904 LOADING MOTOR
CN005
S1 CAM ENCODER
ROTARY SWITCH
CAM POSITION
CN003
D+5V
IC002 (1/2) WAVE SHAPER
Q002 SUPPLY END SENSOR
Q001 TAKE-UP END SENSOR
UNSW D+5V
IC002 (2/2) WAVE SHAPER
PH001 SUPPLY REEL FG
PH002 TAKE-UP REEL FG
X201 12MHz
UN SW 5V
D204
D001 TOP/END LED
Q201 LED DRIVE
S001 CASSETE UP/DOWN
UP DOWN
S002 REC PROOF
IC201 CAM/LOADING MOTOR DRIVE
CAM(+) CAM(-) LOAD(+)
CAM CW/CCW LOAD
MTR 12V
IC203 (2/2) SYSTEM CONTROL
S SENSD
T SENS
S REEL
T REEL
XTAL
EXTAL
VDD
AV DD
AV REF
END LED
C DOWN
CIN/REC PRE
CAM
CW/CCW
LOAD
MODE 1
MODE 2
MODE 3
MODE 4
MODE CONT
S CLK
SI BUS
SO BUS
COSMO CS
COSMO RST
V PB
E TAPE
ORC ON
QVD
QHD ENABLE
JOG
SECAM
ME SECAM
LP HEAD
RF ENV
REC P
HEAD CONT
OSD MUTE
C+ CONT
V SYNC
V PB
LINE 1
LINE 2
AF ENV
AF REC P
REC
A MUTE
NA PB
NA REC P
FULL ERS
SP
AV CONT
SO 1
SCK 1
B MODEL ONLY
Q301 MUTE
VCOLOR OSD CONT
COMP SYNC
MUTE
CLK
DATA
CN301 (4/6)
To TUNER BLOCK
CN302 (3/4)
FROM/To TIMER/TUNER MODE CONTROL BLOCK
CN304 (4/4)
CN303 (1/2)
FROM/To VIDEO 1 BLOCK
FE ON
REC CUR
FROM/To VIDEO 2 BLOCK
FROM/To AUDIO BLOCK
AN 5V
IC303 SYNCHRONIZED SERIAL BUS PARALLEL
TAIL MARK COUNTER
CLOCK GATE
ADDRESS SHIFT REGISTER
ADDRESS DECODER
DATA SHIFT REGISTER
OUTPUT LATCH REGISTER
DIVIDE
Q302 SW

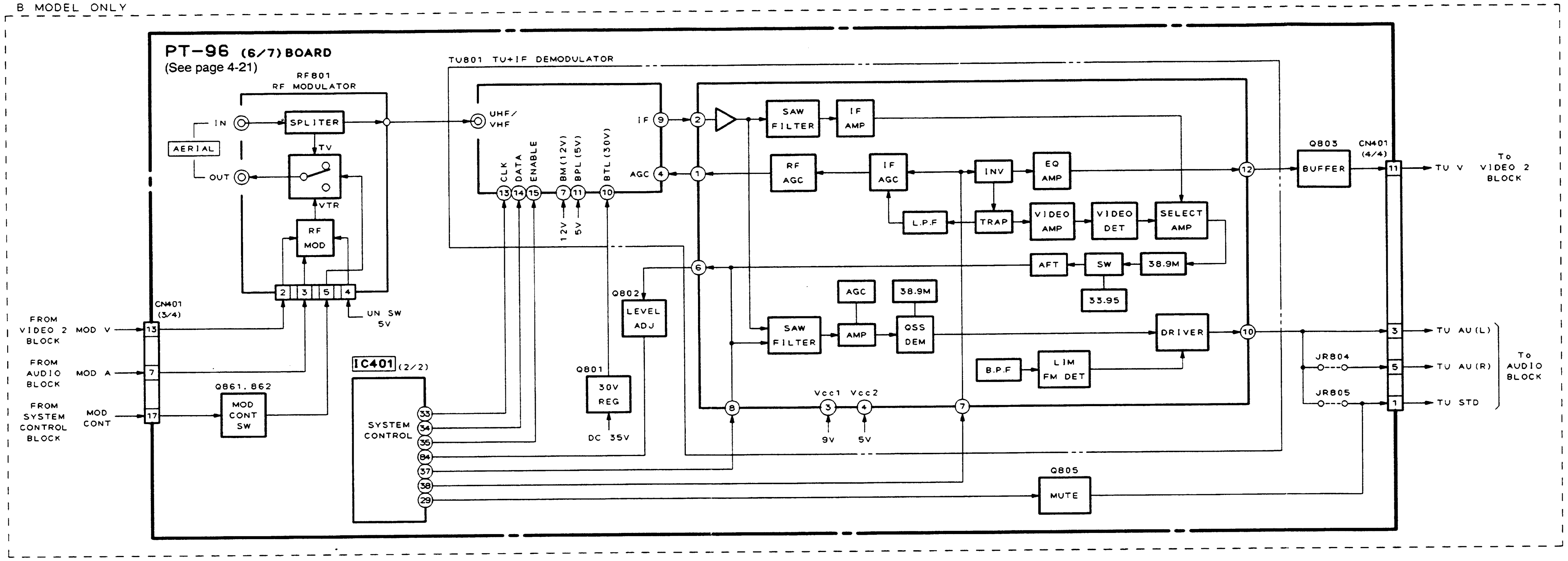
3-5. AUDIO BLOCK DIAGRAM


IC260
AFM
REC/PB AMP
SW 5V
VCC
AUDIO HEAD
CH 1
CH 2
CN801
HEAD AMP
REC ON
VCC
BUFFER
CURRENT AMP
AGC DET
AGC DET
AGC AMP
PB ON
CONTROL LOGIC
CN803
CN001 (2/2)
To VIDEO BLOCK
REC
RV-33 BOARD (2/2) (See page 4-7)
PB RF fo & HF/N DET BPF fo
RV101
IC101
AUDIO PROCESS
HF-34 BOARD
(See page 4-33)
CN103
PB RF
REC RF
B. P. F
ENVE
MODEM LCH
MODEM RCH
EMPH DOC
EMPH DOC
SHWP GEN.
PNR LCH
PNR RCH
FM DET
OUTPUT SW
LINE AMP
MIX AMP
SERIAL CTRL
EVR ALC
SW
SW
Q103
Q104
RV102
VCO fo (R) 1.8M (PAL)
RV103
VCO fo (L) 1.4M (PAL)
REG
Q102
Q101
UNREG 12V
UNREG -9V
VCC
AF ENV
AF SWP
CLK
DATA
A MUTE
CN102
LINE (L)
LINE (R)
RF CONV
NORMAL
HIFI (L)
HIFI (R)
CN101
CN405
CN301 (6/6)
FROM TUNER BLOCK
CN406
CN303 (2/2)
DATA
CLK
AF ENV
AF REC P
REC
FROM/To SYSTEM CONTROL BLOCK
AF SWP
FROM SERVO BLOCK
CN857
BIAS (-)
BIAS (+)
CHECK PIN
CN854
A HEAD (X)
A HEAD (Y)
AUDIO REC/PB HEAD
IC401
PB/REC AMP. SWITCH
NORMAL
NORM AU
RV851
BIAS ADJ
D402
A MUTE
NA PB
SP
NA REC P
FULL ERS
FROM SYSTEM CONTROL BLOCK
Q851
T851
A ERASE HEAD
BIAS/ ERASE OSC
Q853, 854
Q852
T852
BIAS/ FE OSC
Q855
VCC
VCC
CN855
FE HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
MA-181 BOARD (5/6)
(See page 4-16)
05
CN301 (5/6)
MOD AU
To TUNER BLOCK
CN801 (1/2)
LINE (L)
LINE (R)
HIFI (L)
HIFI (R)
NORM AU
CN701 (1/2)
CN802
TU STD
CN702
TU AU (L)
TU AU (R)
EXCEPT B. NP MODEL
JR713
JR763
FROM SYSTEM CONTROL BLOCK
L1 CONT
L2 CONT
C+ CONT
CN803 (4/4)
CN703 (4/4)
AUDIO (L)
AUDIO (R)
CJ701 (3/4)
EURO AV
IC7
CANA
PJ601 (2/2)
LINE 2 IN
AUDIO (L)
AUDIO (R)
CN601 (2/3)
MF-243 BOARD (2/3)
(See page 4-16)
CN402 (2/3)
CN801 (2/2)
L2 AU (L)
L2 AU (R)
CN701 (2/2)
CN902 (2/3)
C+A (L)
C+A (R)
CN706 (2/3)
CN904
CN704
L3 AU (L)
L3 AU (R)
UX, UY ONLY
CJ901 (3/4)
PAY TV CANAL PLUS
C+A (L)
C+A (R)
CP-65 BOARD (3/4)
(See page 4-45)

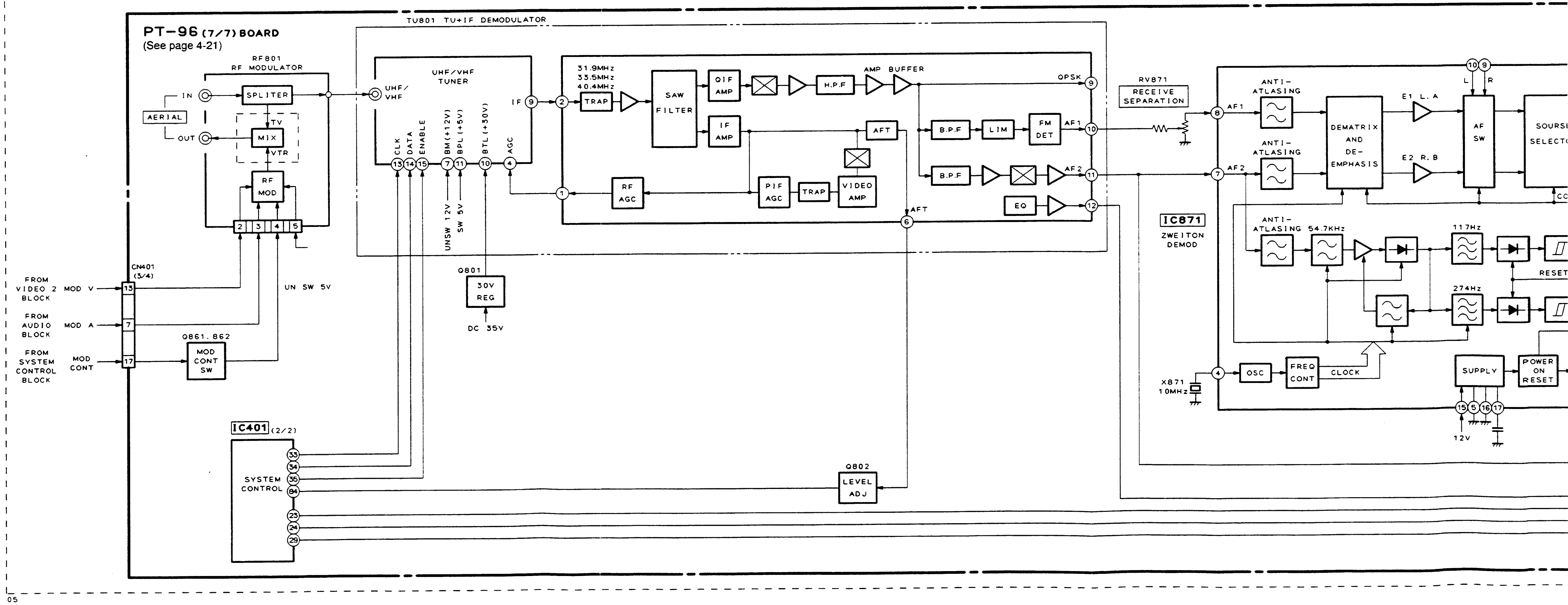

HF-34 BOARD
(See page 4-33)
IC101
AUDIO PROCESS
ENVE
SHWP GEN.
FM DET
VCC
EMPH DOC
PNR LCH
PNR RCH
OUTPUT SW
LINE AMP
MIX AMP
SERIAL CTRL
EVR ALC
REG
Q102
Q101
UNREG 12V
UNREG -9V
CN102
LINE (L)
LINE (R)
RF CONV
NORMAL
HIFI (L)
HIFI (R)
CN101
AF ENV
AF SWP
CLK
DATA
A MUTE
CN406
CN405
CN301 (5/6)
MOD AU
To TUNER BLOCK
CN301 (6/6)
FROM TUNER BLOCK
CN801 (1/2)
CN802
CN803 (4/4)
TU STD
TU AU (L)
TU AU (R)
L1 CONT
L2 CONT
C+ CONT
NORM AU
FROM SYSTEM CONTROL BLOCK
CN701 (1/2)
CN702
CN703 (4/4)
CJ702
LINE 1 OUT
AUDIO (L)
AUDIO (R)
EXCEPT B. NP MODEL
JR706
JR756
JR713
JR763
IC701
AUDIO MODE SELECT
IC702
BUFFER
IC703
NORMAL AU INPUT SELECT
DATA
CLK
AF ENV
AF REC P
REC
FROM/To SYSTEM CONTROL BLOCK
AF SWP
FROM SERVO BLOCK
IC401
B/REC
SWITCH
NORMAL
NORM AU
D402
A MUTE
NA PB
SP
NA REC P
FULL ERS
FROM SYSTEM CONTROL BLOCK
Q855
VCC
MA-181 BOARD (5/6)
(See page 4-16)
PJ601 (2/2)
LINE 2 IN
AUDIO (L)
AUDIO (R)
CN601 (2/3)
MF-243 BOARD (2/3)
(See page 4-16)
CN402 (2/3)
CN801 (2/2)
L2 AU (L)
L2 AU (R)
CN701 (2/2)
AUDIO (L)
AUDIO (R)
CJ701 (3/4)
EURO AV
B. NP, UX, UY MODEL ONLY
IC706 (2/2)
CANAL PLUS SW (AUDIO)
CJ701 (4/4)
EURO AV
CN902 (2/3)
C+A (L)
C+A (R)
CN706 (2/3)
CJ901 (3/4)
PAY TV CANAL PLUS
CN904
L3 AU (L)
L3 AU (R)
CN704
UX, UY ONLY
CP-65 BOARD (3/4)
(See page 4-45)
(See page 4-35)
IO-50 BOARD (2/2)
CN706 (3/3)
CN902 (3/3)
CJ901 (4/4)
PAL TV CANAL PLUS
CP-65 BOARD (4/4)
(See page 4-45)

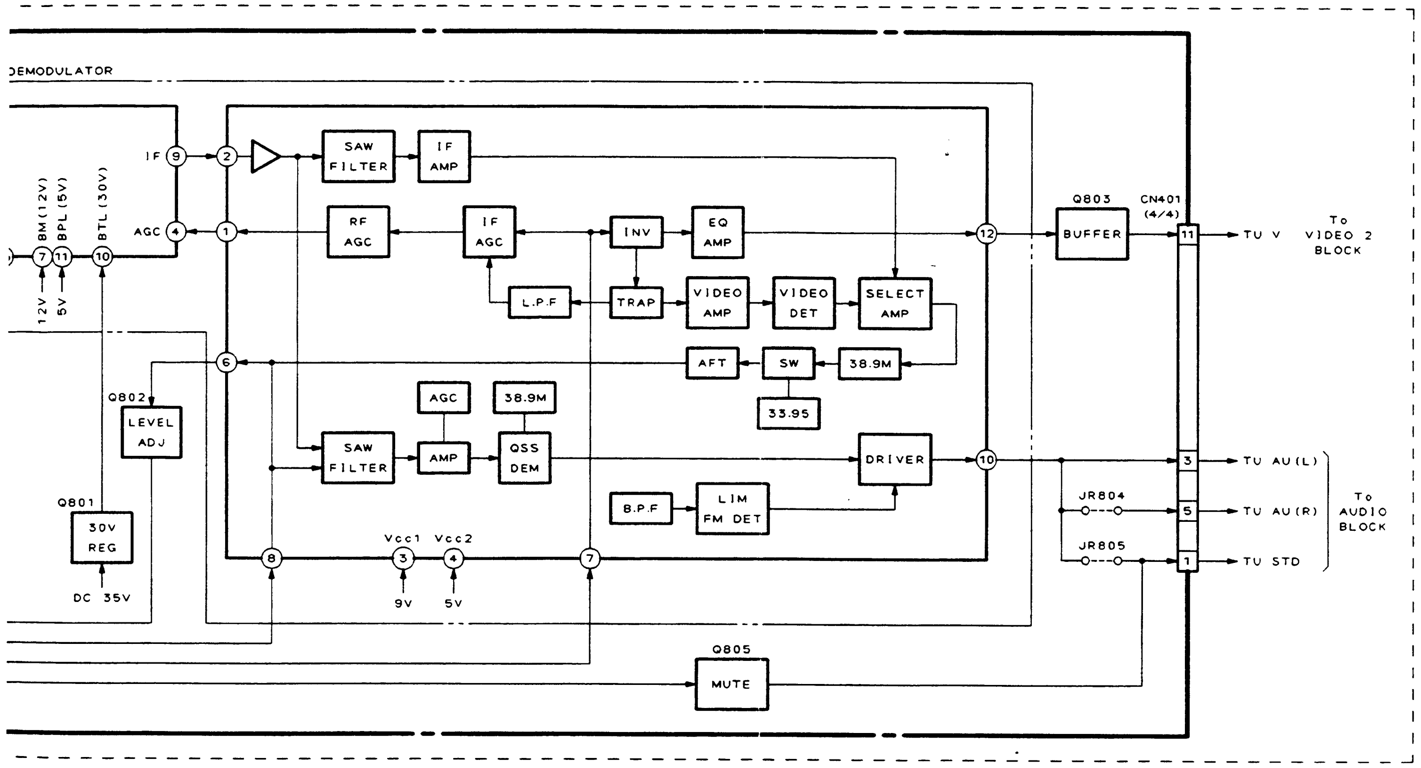
3-6. TUNER BLOCK DIAGRAM-1

B MODEL ONLY

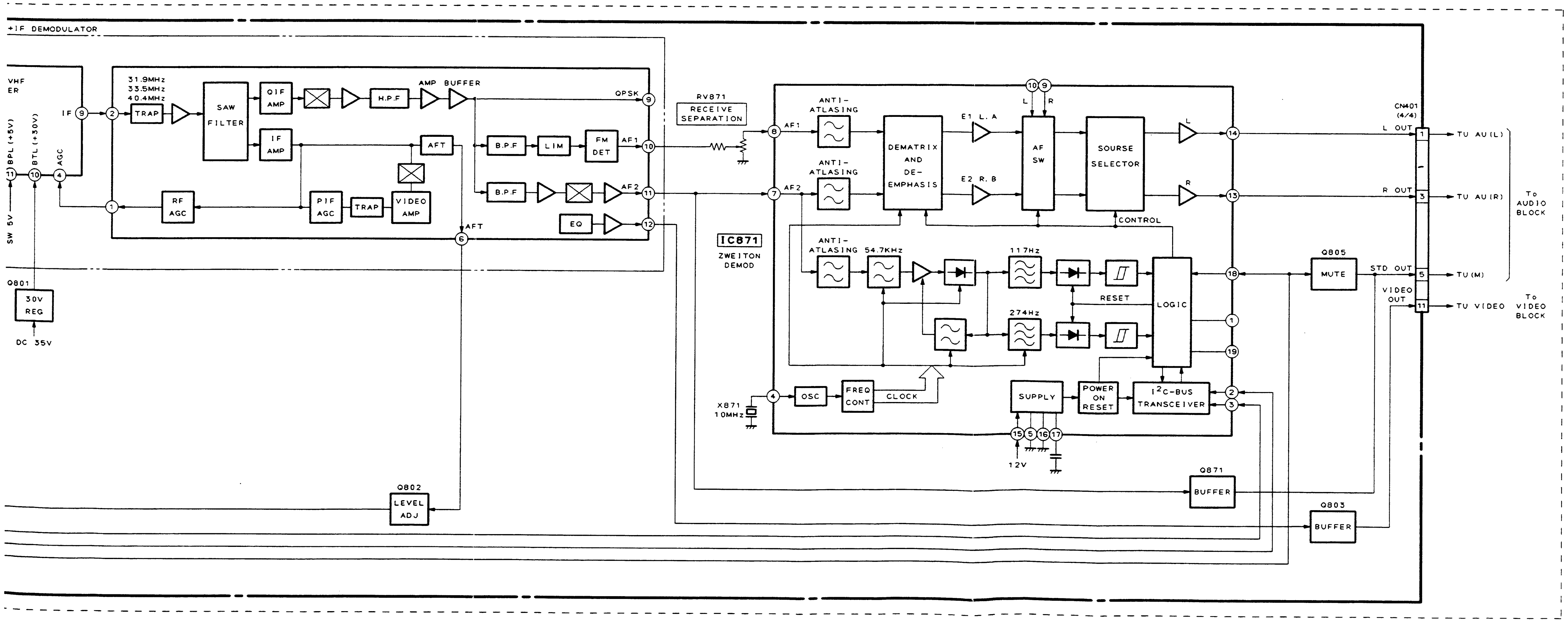

PT-96 (6/7) BOARD
(See page 4-21)
RF801
RF MODULATOR
IN
OUT
AERIAL
SPLITER
TV
VTR
RF MOD
UN SW 5V
CN401 (3/4)
FROM VIDEO 2 BLOCK
MOD V
FROM AUDIO BLOCK
MOD A
FROM SYSTEM CONTROL BLOCK
MOD CONT
Q861, 862
MOD CONT SW
IC401 (2/2)
SYSTEM CONTROL
TU801 TU+IF DEMODULATOR
UHF/VHF
CLK
DATA
ENABLE
BM(12V)
BPL(5V)
BTL(30V)
12V
5V
IF
AGC
Q802
LEVEL ADJ
Q801
30V REG
DC 35V
SAW FILTER
IF AMP
RF AGC
IF AGC
INV
EQ AMP
L.P.F
TRAP
VIDEO AMP
VIDEO DET
SELECT AMP
AFT
SW
38.9M
33.95
AGC
38.9M
SAW FILTER
AMP
QSS DEM
DRIVER
B.P.F
LIM FM DET
Vcc1
Vcc2
9V
5V
Q805
MUTE
Q803
BUFFER
CN401 (4/4)
TU V
To VIDEO 2 BLOCK
JR804
JR805
TU AU(L)
TU AU(R)
TU STD
To AUDIO BLOCK

VP, AP, IT MODEL ONLY


PT-96 (7/7) BOARD
(See page 4-21)
RF801
RF MODULATOR
IN
OUT
AERIAL
SPLITER
TV
MIX
VTR
RF MOD
UN SW 5V
CN401 (3/4)
FROM VIDEO 2 BLOCK
MOD V
FROM AUDIO BLOCK
MOD A
FROM SYSTEM CONTROL BLOCK
MOD CONT
Q861, 862
MOD CONT SW
IC401 (2/2)
SYSTEM CONTROL
TU801 TU+IF DEMODULATOR
UHF/VHF TUNER
UHF/VHF
CLK
DATA
ENABLE
BM(+12V)
BPL(+5V)
BTL(+30V)
AGC
UNSW 12V
SW 5V
IF
Q801
30V REG
DC 35V
31.9MHz
33.5MHz
40.4MHz
TRAP
SAW FILTER
QIF AMP
IF AMP
H.P.F
AMP BUFFER
OPSK
AFT
RF AGC
PIF AGC
TRAP
VIDEO AMP
B.P.F
LIM
FM DET
AF1
AF2
EQ
Q802
LEVEL ADJ
RV871
RECEIVE SEPARATION
IC871
ZWEITON DEMOD
ANTI-ATLASING
DEMATRIX AND DE-EMPHASIS
E1 L, A
E2 R, B
AF SW
L
R
SOURSE SELECTOR
ANTI-ATLASING 54.7KHz
117Hz
274Hz
RESET
X871 10MHz
OSC
FREQ CONT
CLOCK
SUPPLY
POWER ON RESET
12V

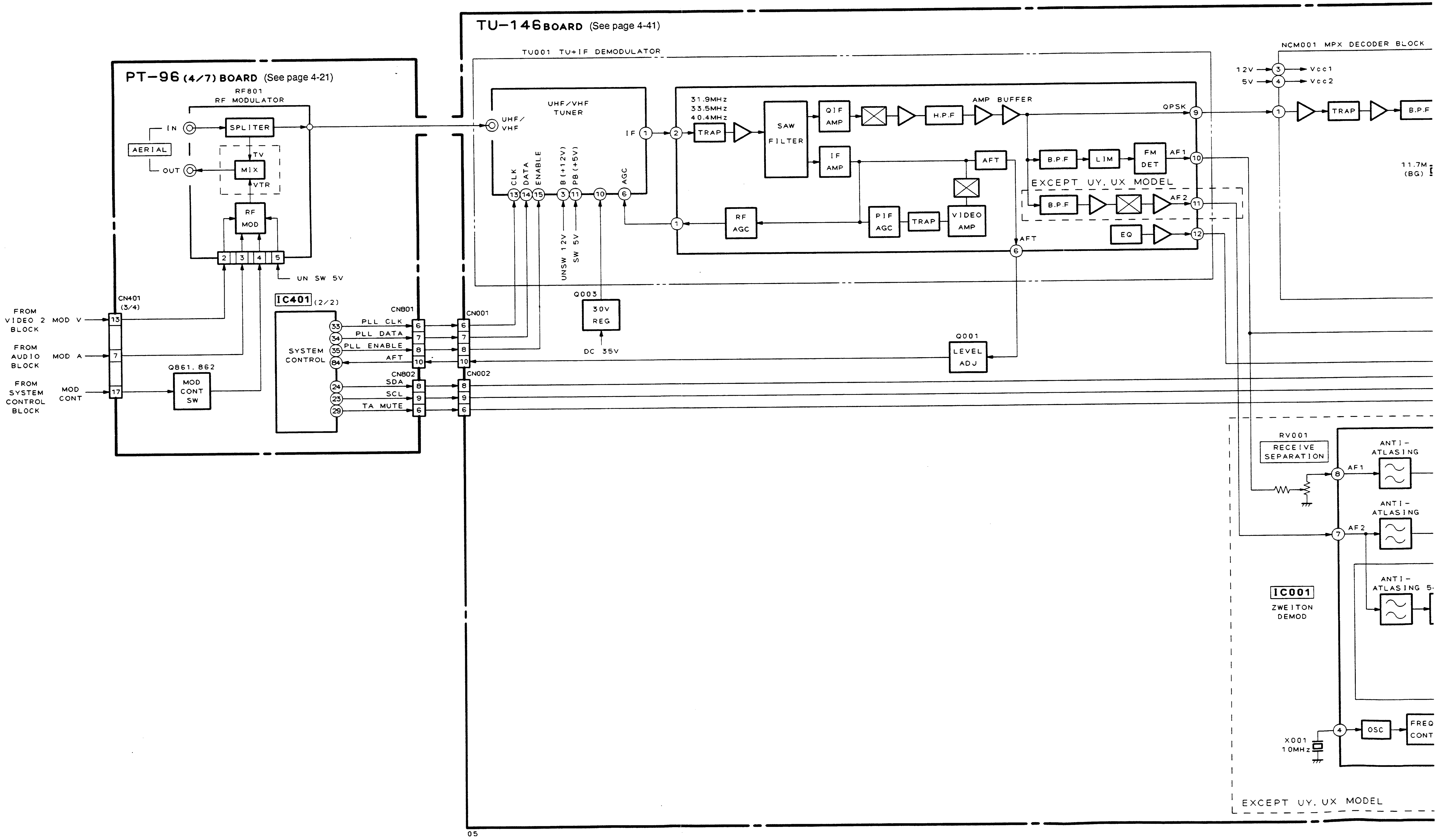


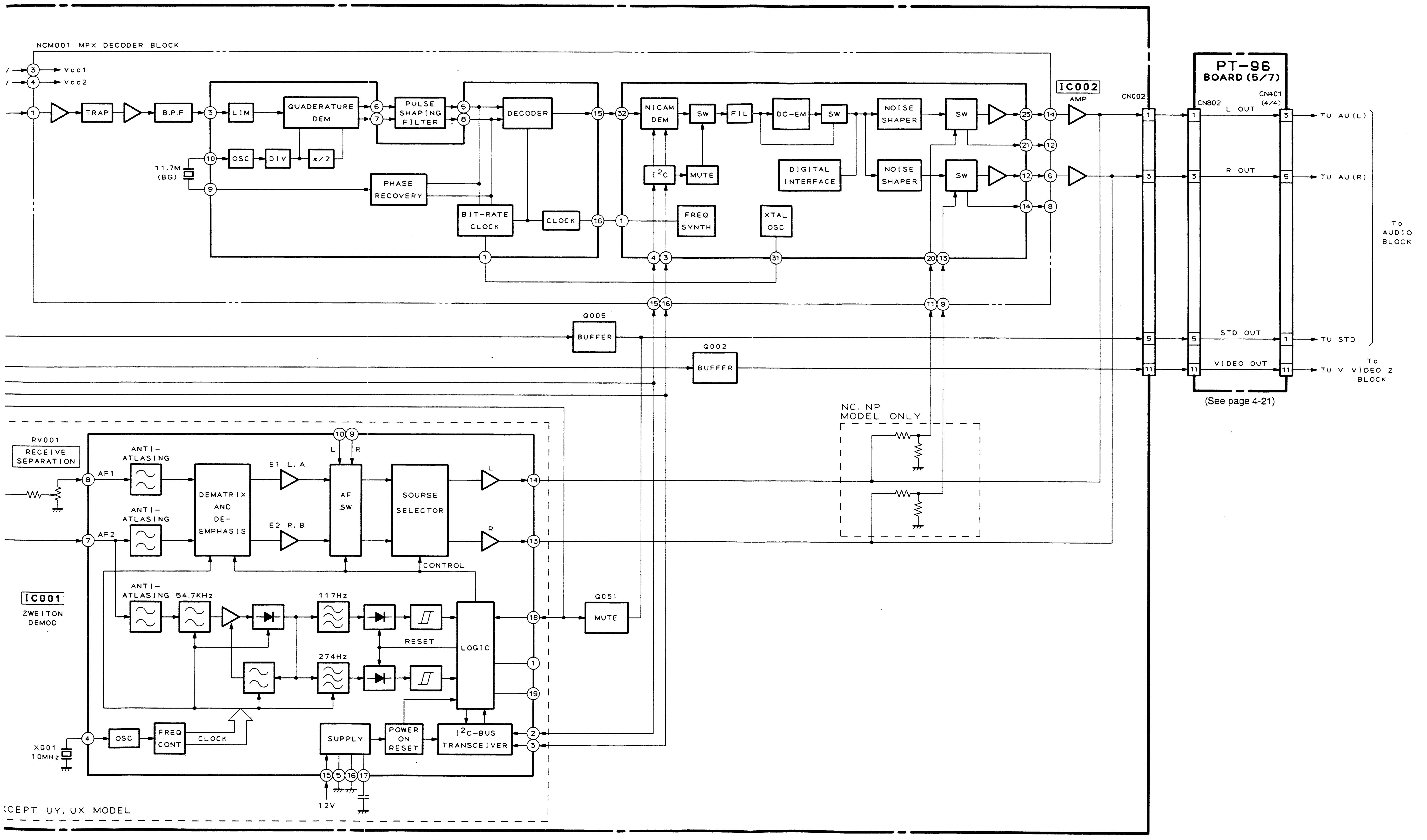
DEMODULATOR
IF
AGC
BM(12V)
BPL(5V)
BTL(30V)
12V
5V
SAW FILTER
IF AMP
RF AGC
IF AGC
INV
EQ AMP
L.P.F
TRAP
VIDEO AMP
VIDEO DET
SELECT AMP
AFT
SW
38.9M
33.95
AGC
38.9M
SAW FILTER
AMP
QSS DEM
DRIVER
B.P.F
LIM FM DET
Q802
LEVEL ADJ
Q801
30V REG
DC 35V
Vcc1
Vcc2
9V
5V
Q803
BUFFER
CN401 (4/4)
TU V
To VIDEO 2 BLOCK
TU AU(L)
JR804
TU AU(R)
JR805
TU STD
To AUDIO BLOCK
Q805
MUTE



+IF DEMODULATOR
VHF
ER
IF
BPL(+5V)
BTL(+30V)
AGC
SW 5V
31.9MHz
33.5MHz
40.4MHz
TRAP
SAW FILTER
QIF AMP
IF AMP
H.P.F
AMP BUFFER
QPSK
AFT
B.P.F
LIM
FM DET
AF1
AF2
RF AGC
PIF AGC
TRAP
VIDEO AMP
EQ
AFT
Q801
30V REG
DC 35V
Q802
LEVEL ADJ
RV871
RECEIVE SEPARATION
IC871
ZWEITON DEMOD
ANTI-ATLASING
ANTI-ATLASING
ANTI-ATLASING 54.7KHz
DEMATRIX AND DE-EMPHASIS
E1 L.A
E2 R.B
L R
AF SW
SOURSE SELECTOR
CONTROL
117Hz
274Hz
RESET
LOGIC
X871 10MHz
OSC
FREQ CONT
CLOCK
SUPPLY
POWER ON RESET
I²C-BUS TRANSCEIVER
12V
CN401 (4/4)
L OUT
R OUT
STD OUT
VIDEO OUT
TU AU(L)
TU AU(R)
To AUDIO BLOCK
TU(M)
TU VIDEO
To VIDEO BLOCK
Q805
MUTE
Q871
BUFFER
Q803
BUFFER

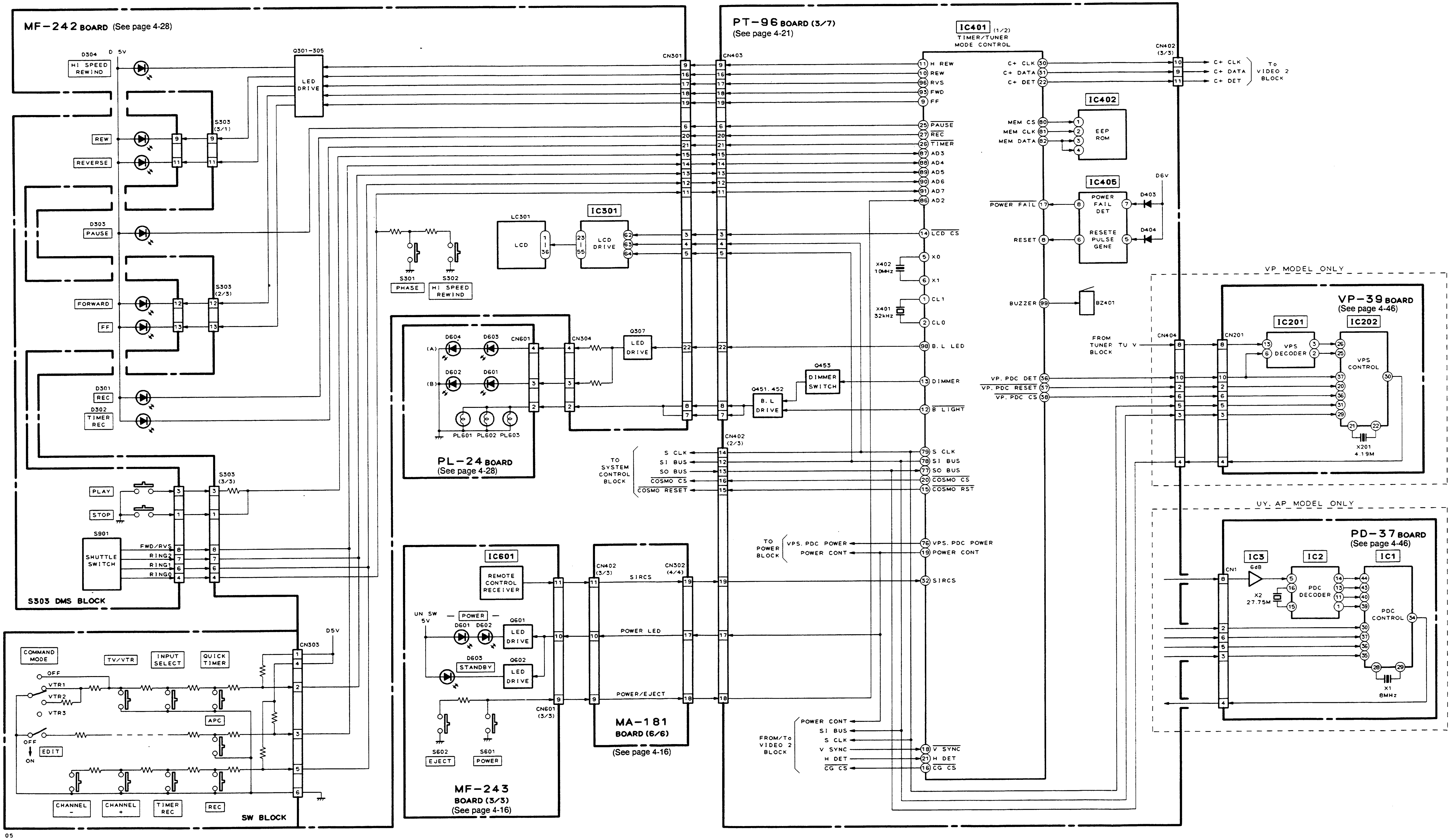
3-7. TUNER BLOCK DIAGRAM-2


TU-146 BOARD (See page 4-41)
TU001 TU+IF DEMODULATOR
NCM001 MPX DECODER BLOCK
PT-96 (4/7) BOARD (See page 4-21)
RF801
RF MODULATOR
IN
AERIAL
OUT
SPLITER
TV
MIX
VTR
RF MOD
UN SW 5V
CN401 (3/4)
FROM VIDEO 2 BLOCK
MOD V
FROM AUDIO BLOCK
MOD A
FROM SYSTEM CONTROL BLOCK
MOD CONT
Q861, 862
MOD CONT SW
IC401 (2/2)
SYSTEM CONTROL
CN801
PLL CLK
PLL DATA
PLL ENABLE
AFT
CN802
SDA
SCL
TA MUTE
CN001
CN002
UHF/VHF
UHF/VHF TUNER
IF
CLK
DATA
ENABLE
B (+12V)
PB (+5V)
AGC
UNSW 12V
SW 5V
Q003
30V REG
DC 35V
31.9MHz
33.5MHz
40.4MHz
TRAP
SAW FILTER
QIF AMP
IF AMP
H.P.F
AMP BUFFER
QPSK
AFT
B.P.F
LIM
FM DET
AF1
EXCEPT UY, UX MODEL
AF2
RF AGC
PIF AGC
VIDEO AMP
EQ
Q001
LEVEL ADJ
12V
5V
Vcc1
Vcc2
11.7M
(BG)
RV001
RECEIVE SEPARATION
ANTI-ATLASING
IC001
ZWEITON DEMOD
X001
10MHz
OSC
FREQ CONT
EXCEPT UY, UX MODEL
05

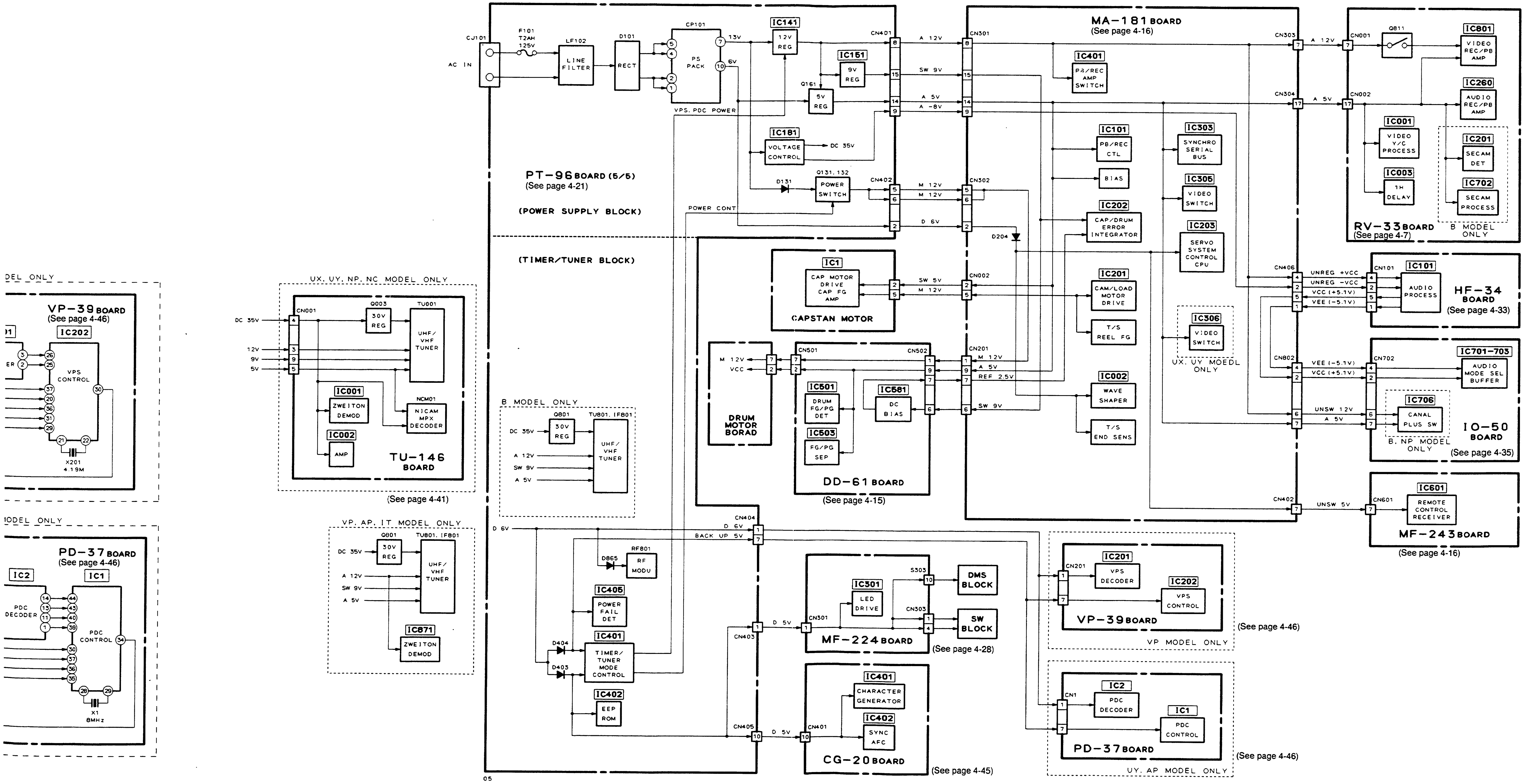

NCM001 MPX DECODER BLOCK
Vcc1
Vcc2
TRAP
B.P.F
LIM
QUADERATURE DEM
PULSE SHAPING FILTER
DECODER
OSC
DIV
π/2
11.7M (BG)
PHASE RECOVERY
BIT-RATE CLOCK
CLOCK
NICAM DEM
SW
FIL
DC-EM
SW
NOISE SHAPER
SW
I²C
MUTE
DIGITAL INTERFACE
NOISE SHAPER
SW
FREQ SYNTH
XTAL OSC
IC002
AMP
CN002
PT-96 BOARD (5/7)
CN802
CN401 (4/4)
L OUT
R OUT
STD OUT
VIDEO OUT
TU AU(L)
TU AU(R)
TU STD
TU V
To AUDIO BLOCK
To VIDEO 2 BLOCK
Q005
BUFFER
Q002
BUFFER
NC, NP MODEL ONLY
RV001
RECEIVE SEPARATION
ANTI-ATLASING
AF1
AF2
DEMATRIX AND DE-EMPHASIS
E1 L.A
E2 R.B
AF SW
L
R
SOURSE SELECTOR
CONTROL
ANTI-ATLASING 54.7KHz
117Hz
274Hz
RESET
LOGIC
Q051
MUTE
IC001
ZWEITON DEMOD
X001 10MHz
OSC
FREQ CONT
CLOCK
SUPPLY
POWER ON RESET
I²C-BUS TRANSCEIVER
12V
:CEPT UY, UX MODEL

(See page 4-21)

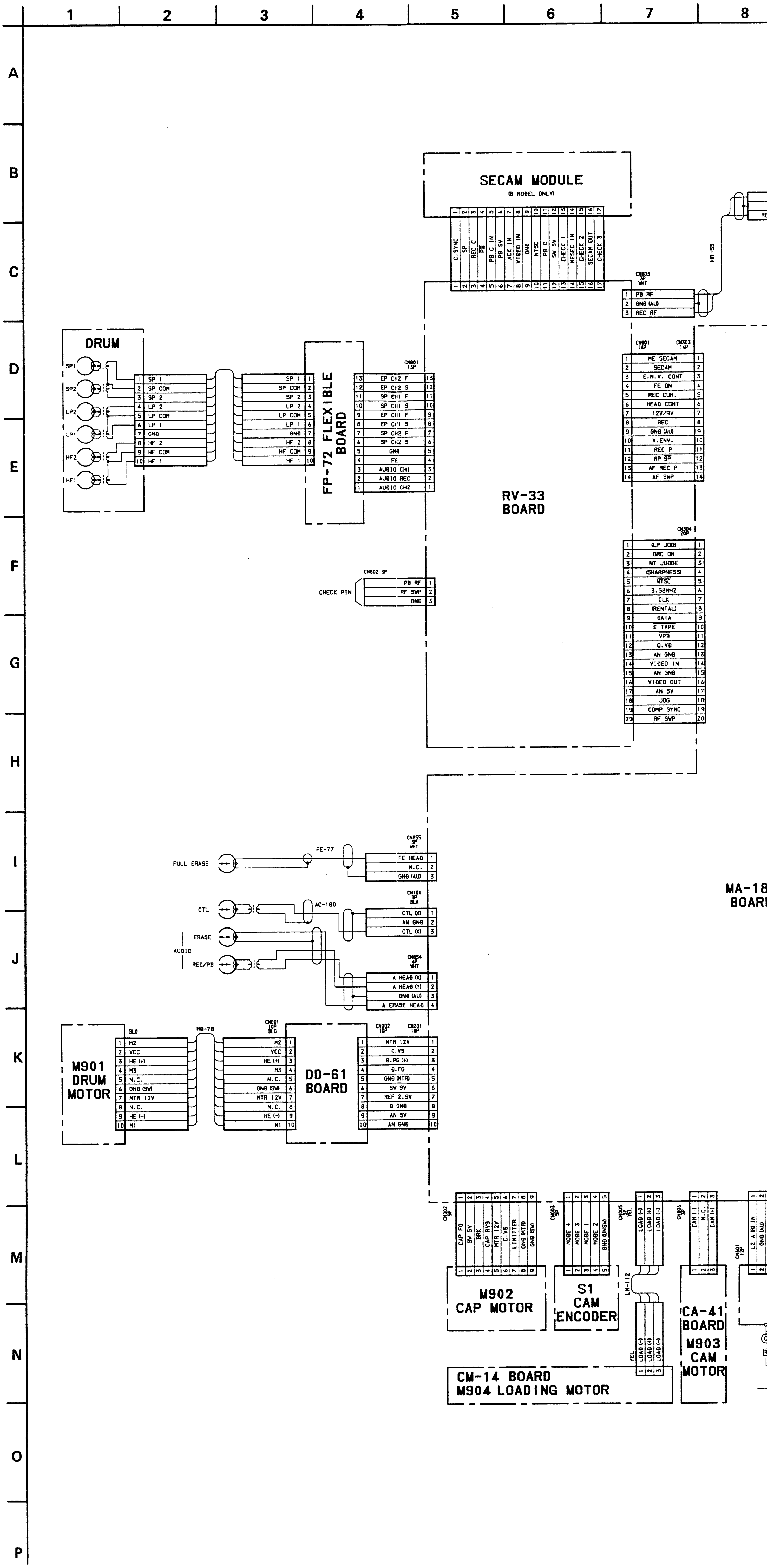
3-8. TIMER, MODE CONTROL BLOCK DIADRAM


MF-242 BOARD (See page 4-28)
D304 D 5V
HI SPEED REWIND
Q301-305
LED DRIVE
CN301
S303 (1/3)
REW
REVERSE
D303
PAUSE
S303 (2/3)
FORWARD
FF
D301
REC
D302
TIMER REC
S303 (3/3)
PLAY
STOP
S901
SHUTTLE SWITCH
FWD/RVS
RING2
RING1
RING0
S303 DMS BLOCK
LC301
LCD
IC301
LCD DRIVE
S301
PHASE
S302
HI SPEED REWIND
PL-24 BOARD (See page 4-28)
D604
D603
D602
D601
(A)
(B)
CN601
CN304
PL601 PL602 PL603
Q307
LED DRIVE
Q451, 452
B. L DRIVE
Q453
DIMMER SWITCH
COMMAND MODE
TV/VTR
INPUT SELECT
QUICK TIMER
OFF
VTR1
VTR2
VTR3
APC
OFF
ON
EDIT
CHANNEL -
CHANNEL +
TIMER REC
REC
SW BLOCK
CN303
D5V
IC601
REMOTE CONTROL RECEIVER
UN SW 5V
POWER
D601 D602
Q601
LED DRIVE
D603
STANDBY
Q602
LED DRIVE
S602
EJECT
S601
POWER
CN601 (3/3)
MF-243 BOARD (3/3) (See page 4-16)
CN402 (3/3)
CN302 (4/4)
SIRCS
POWER LED
POWER/EJECT
MA-181 BOARD (6/6) (See page 4-16)
PT-96 BOARD (3/7) (See page 4-21)
CN403
IC401 (1/2) TIMER/TUNER MODE CONTROL
H REW
REW
RVS
FWD
FF
PAUSE
REC
TIMER
AD3
AD4
AD5
AD6
AD7
AD2
LCD CS
X0
X1
CL1
CL0
X402 10MHz
X401 32kHz
B. L LED
DIMMER
B LIGHT
CN402 (2/3)
TO SYSTEM CONTROL BLOCK
S CLK
SI BUS
SO BUS
COSMO CS
COSMO RESET
COSMO RST
TO POWER BLOCK
VPS. PDC POWER
POWER CONT
SIRCS
FROM/TO VIDEO 2 BLOCK
POWER CONT
SI BUS
S CLK
V SYNC
H DET
CG CS
C+ CLK
C+ DATA
C+ DET
CN402 (3/3)
To VIDEO 2 BLOCK
IC402
MEM CS
MEM CLK
MEM DATA
EEP ROM
IC405
POWER FAIL DET
RESETE PULSE GENE
POWER FAIL
RESET
D6V
D403
D404
BUZZER
BZ401
FROM TUNER TU V BLOCK
CN404
VP. PDC DET
VP. PDC RESET
VP. PDC CS
VP MODEL ONLY
VP-39 BOARD (See page 4-46)
IC201
IC202
CN201
VPS DECODER
VPS CONTROL
X201 4.19M
UY, AP MODEL ONLY
PD-37 BOARD (See page 4-46)
IC3
IC2
IC1
CN1
6dB
PDC DECODER
PDC CONTROL
X2 27.75M
X1 8MHz

3-9. POWER SUPPLY BLOCK DIAGRAM


PT-96 BOARD (5/5)
(See page 4-21)
(POWER SUPPLY BLOCK)
(TIMER/TUNER BLOCK)
CJ101
AC IN
F101 T2AH 125V
LF102
LINE FILTER
D101
RECT
CP101
PS PACK
13V
6V
VPS. PDC POWER
IC141
12V REG
IC151
9V REG
Q161
5V REG
IC181
VOLTAGE CONTROL
DC 35V
D131
Q131, 132
POWER SWITCH
POWER CONT
CN401
CN402
A 12V
SW 9V
A 5V
A -8V
M 12V
D 6V
D204
MA-181 BOARD
(See page 4-16)
CN301
CN302
CN002
CN201
IC401
PB/REC AMP SWITCH
IC101
PB/REC CTL
BIAS
IC202
CAP/DRUM ERROR INTEGRATOR
IC201
CAM/LOAD MOTOR DRIVE
T/S REEL FG
IC002
WAVE SHAPER
T/S END SENS
IC303
SYNCHRO SERIAL BUS
IC305
VIDEO SWITCH
IC203
SERVO SYSTEM CONTROL CPU
IC306
VIDEO SWITCH
UX, UY MOEDL ONLY
CN303
CN304
CN406
CN802
CN402
RV-33 BOARD
(See page 4-7)
CN001
CN002
Q811
IC801
VIDEO REC/PB AMP
IC260
AUDIO REC/PB AMP
IC001
VIDEO Y/C PROCESS
IC003
1H DELAY
IC201
SECAM DET
IC702
SECAM PROCESS
B MODEL ONLY
HF-34 BOARD
(See page 4-33)
CN101
IC101
AUDIO PROCESS
UNREG +VCC
UNREG -VCC
VCC (+5.1V)
VEE (-5.1V)
IO-50 BOARD
(See page 4-35)
CN702
IC701-703
AUDIO MODE SEL BUFFER
IC706
CANAL PLUS SW
B, NP MODEL ONLY
UNSW 12V
MF-243 BOARD
(See page 4-16)
CN601
IC601
REMOTE CONTROL RECEIVER
UNSW 5V
CAPSTAN MOTOR
IC1
CAP MOTOR DRIVE CAP FG AMP
SW 5V
DRUM MOTOR BORAD
M 12V
VCC
DD-61 BOARD
(See page 4-15)
CN501
CN502
IC501
DRUM FG/PG DET
IC581
DC BIAS
IC503
FG/PG SEP
REF 2.5V
SW 9V
UX, UY, NP, NC MODEL ONLY
TU-146 BOARD
(See page 4-41)
CN001
Q003
30V REG
TU001
UHF/VHF TUNER
IC001
ZWEITON DEMOD
NCM01
NICAM MPX DECODER
IC002
AMP
DC 35V
12V
9V
5V
B MODEL ONLY
Q801
TU801, IF801
30V REG
UHF/VHF TUNER
A 12V
SW 9V
A 5V
VP, AP, IT MODEL ONLY
IC871
ZWEITON DEMOD
D 6V
CN404
BACK UP 5V
RF801
D865
RF MODU
IC405
POWER FAIL DET
IC401
TIMER/TUNER MODE CONTROL
D404
D403
IC402
EEP ROM
CN403
CN405
D 5V
MF-224 BOARD
(See page 4-28)
CN301
CN303
S303
IC501
LED DRIVE
DMS BLOCK
SW BLOCK
CG-20 BOARD
(See page 4-45)
CN401
IC401
CHARACTER GENERATOR
IC402
SYNC AFC
VP-39 BOARD
(See page 4-46)
CN201
IC201
VPS DECODER
IC202
VPS CONTROL
VP MODEL ONLY
PD-37 BOARD
(See page 4-46)
CN1
IC2
PDC DECODER
IC1
PDC CONTROL
UY, AP MODEL ONLY
DEL ONLY
X201 4.19M
ODEL ONLY
X1 8MHz
05

4-1. FRAME SCHEMATIC DIAGRAM


1
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A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
SECAM MODULE
(B MODEL ONLY)
C.SYNC
SP
REC C
PB
PB C IN
PB 5V
ACK IN
VIDEO IN
GND
NTSC
PB C
SW 5V
CHECK 1
MESEC IN
CHECK 2
SECAM OUT
CHECK 3
CN803 3P WHT
PB RF
GND (AU)
REC RF
HR-55
DRUM
SP1
SP2
LP2
LP1
HF2
HF1
SP 1
SP COM
SP 2
LP 2
LP COM
LP 1
GND
HF 2
HF COM
HF 1
FP-72 FLEXIBLE BOARD
CN801 13P
EP CH2 F
EP CH2 S
SP CH1 F
SP CH1 S
EP CH1 F
EP CH1 S
SP CH2 F
SP CH2 S
GND
FE
AUDIO CH1
AUDIO REC
AUDIO CH2
RV-33 BOARD
CN001 14P
CN303 14P
ME SECAM
SECAM
E.N.V. CONT
FE ON
REC CUR.
HEAD CONT
12V/9V
REC
GND (AU)
V.ENV.
REC P
RP SP
AF REC P
AF SWP
CN304 20P
(LP JOG)
ORC ON
NT JUDGE
(SHARPNESS)
NTSC
3.58MHZ
CLK
(RENTAL)
DATA
E TAPE
VPB
Q.VD
AN GND
VIDEO IN
AN GND
VIDEO OUT
AN 5V
JOG
COMP SYNC
RF SWP
CN802 3P
CHECK PIN
PB RF
RF SWP
GND
FULL ERASE
FE-77
CN855 3P WHT
FE HEAD
N.C.
GND (AU)
CTL
AC-180
CN101 3P BLK
CTL (X)
AN GND
CTL (X)
AUDIO
ERASE
REC/PB
CN854 4P WHT
A HEAD (X)
A HEAD (Y)
GND (AU)
A ERASE HEAD
MA-18 BOARD
M901 DRUM MOTOR
BLO
MB-78
CN001 10P BLO
M2
VCC
HE (+)
M3
N.C.
GND (SW)
MTR 12V
N.C.
HE (-)
M1
DD-61 BOARD
CN002 10P
CN201 10P
MTR 12V
D.VS
D.PG (+)
D.FG
GND (MTR)
SW 9V
REF 2.5V
D GND
AN 5V
AN GND
CN002 9P
CAP FG
SW 5V
BRK
CAP RVS
MTR 12V
C.VS
LIMITTER
GND (MTR)
GND (SW)
CN003 5P
MODE 4
MODE 3
MODE 1
MODE 2
GND (UNSW)
CN005 3P YEL
LOAD (+)
LOAD (-)
LOAD (+)
CN004 3P
CAM (-)
N.C.
CAM (+)
CN401 12P
L2 A (B) IN
GND (AU)
M902 CAP MOTOR
S1 CAM ENCODER
LM-112
YEL
CM-14 BOARD
M904 LOADING MOTOR
CA-41 BOARD
M903 CAM MOTOR

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.

(In addition to this, the necessary note is printed in each block.)

For printed wiring boards:

- ○—— : indicates a lead wire mounted on the component side.
- •—— : indicates a lead wire mounted on the printed side.
- ○ : Through hole.
- ■ : Parts mounted on the conductor side.
- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.*
- Circled numbers refer to waveforms.

Caution:

Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

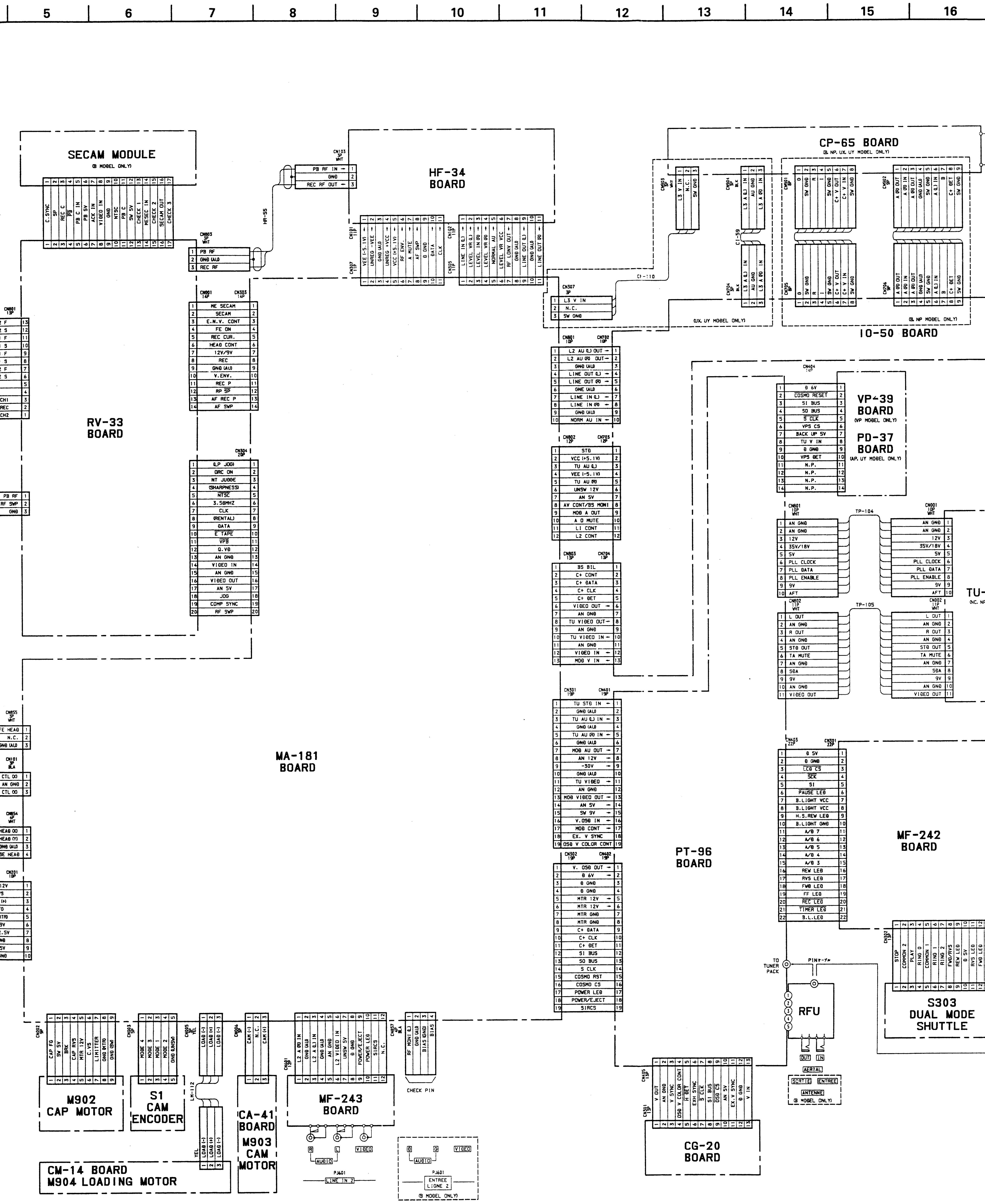
For schematic diagram:

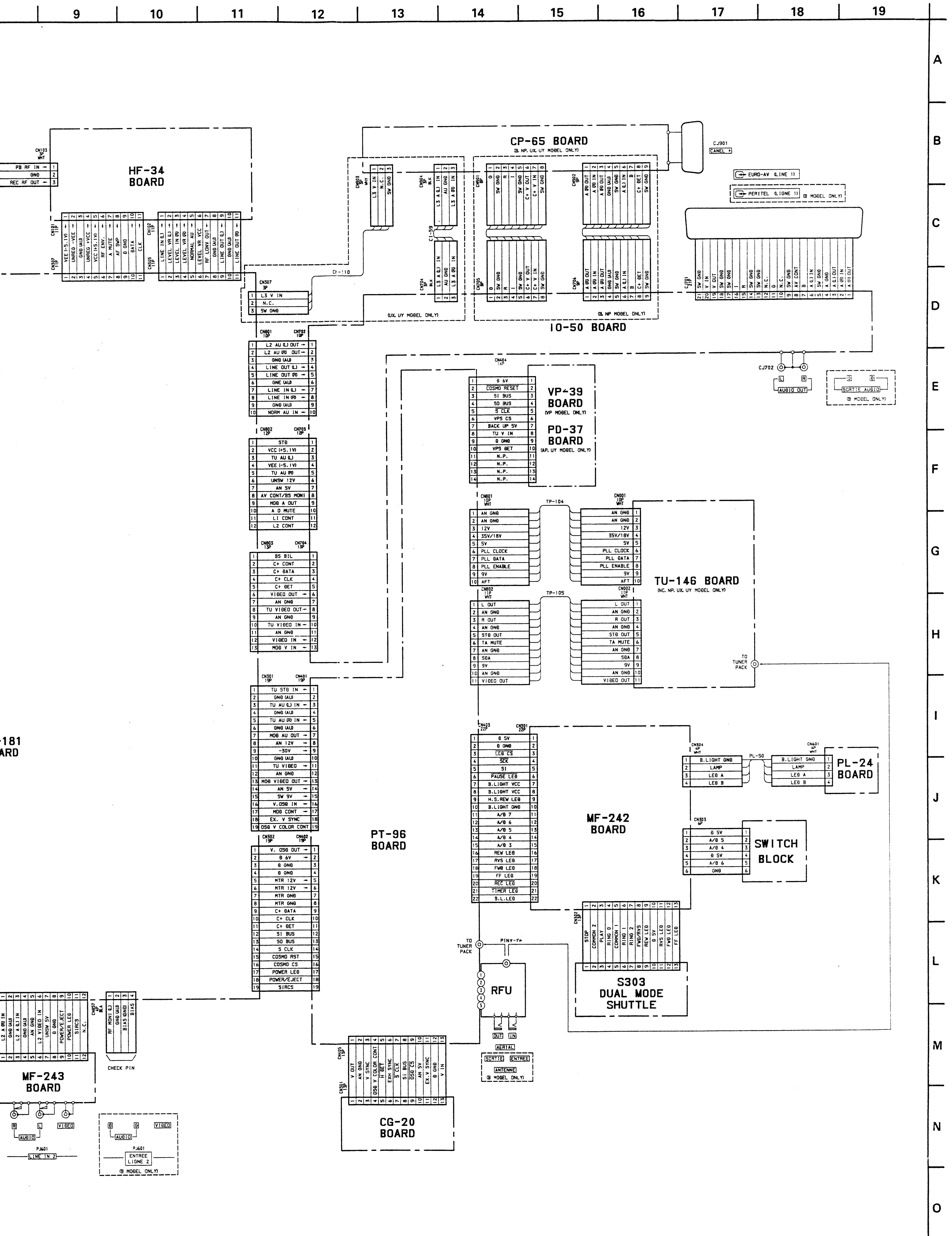
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W (Chip resistors: 1/10W) unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ☐ : panel designation.
- △ : internal component.
- ☐ : adjustment for repair.*
- ━━ : B + Line.*
- ━ ━ ━ : B − Line.*
- ⇨ : IN/OUT direction of B line (+ , −).*
- Circled numbers refer to waveforms.*
- Voltages are dc between measurement point.*
- Readings are taken with a color-bar signal input.*
- Readings are taken with a digital multimeter (DC10MΩ).*
- Voltage are taken with a VOM (Input impedance 10MΩ).*
- Voltage variations may be noted due to normal production tolerances.*

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- * : indicated by the color red.


5
6
7
8
9
10
11
12
13
14
15
16
SECAM MODULE
(B MODEL ONLY)
HF-34 BOARD
CP-65 BOARD
(B, NP, UX, UY MODEL ONLY)
RV-33 BOARD
HR-55
CI-110
CI-59
(UX, UY MODEL ONLY)
(B, NP MODEL ONLY)
IO-50 BOARD
VP-39 BOARD
(VP MODEL ONLY)
PD-37 BOARD
(AP, UY MODEL ONLY)
TP-104
TP-105
TU-
MA-181 BOARD
PT-96 BOARD
MF-242 BOARD
S303 DUAL MODE SHUTTLE
TO TUNER PACK
RFU
OUT
IN
AERIAL
SORTIE
ENTREE
ANTENNE
(B MODEL ONLY)
M902 CAP MOTOR
S1 CAM ENCODER
LM-112
CA-41 BOARD
M903 CAM MOTOR
CM-14 BOARD
M904 LOADING MOTOR
MF-243 BOARD
CHECK PIN
AUDIO
VIDEO
PJ401
LINE IN 2
PJ601
ENTREE LIGNE 2
(B MODEL ONLY)
CG-20 BOARD


9
10
11
12
13
14
15
16
17
18
19
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
HF-34 BOARD
CP-65 BOARD
(B, NP, UX, UY MODEL ONLY)
CJ901
CANEL +
EURO-AV (LINE 1)
PERITEL (LIGNE 1) (B MODEL ONLY)
(UX, UY MODEL ONLY)
(B, NP MODEL ONLY)
10-50 BOARD
CJ702
AUDIO OUT
SORTIE AUDIO
(B MODEL ONLY)
VP-39 BOARD
(VP MODEL ONLY)
PD-37 BOARD
(AP, UY MODEL ONLY)
TP-104
TP-105
TU-146 BOARD
(NC, NP, UX, UY MODEL ONLY)
TO TUNER PACK
-181
ARD
PT-96 BOARD
MF-242 BOARD
PL-50
PL-24 BOARD
SWITCH BLOCK
S303 DUAL MODE SHUTTLE
RFU
PINケーブル
OUT
IN
AERIAL
SORTIE
ENTREE
ANTENNE
(B MODEL ONLY)
CG-20 BOARD
MF-243 BOARD
CHECK PIN
AUDIO
VIDEO
PJ601
LINE IN 2
ENTREE LIGNE 2
(B MODEL ONLY)

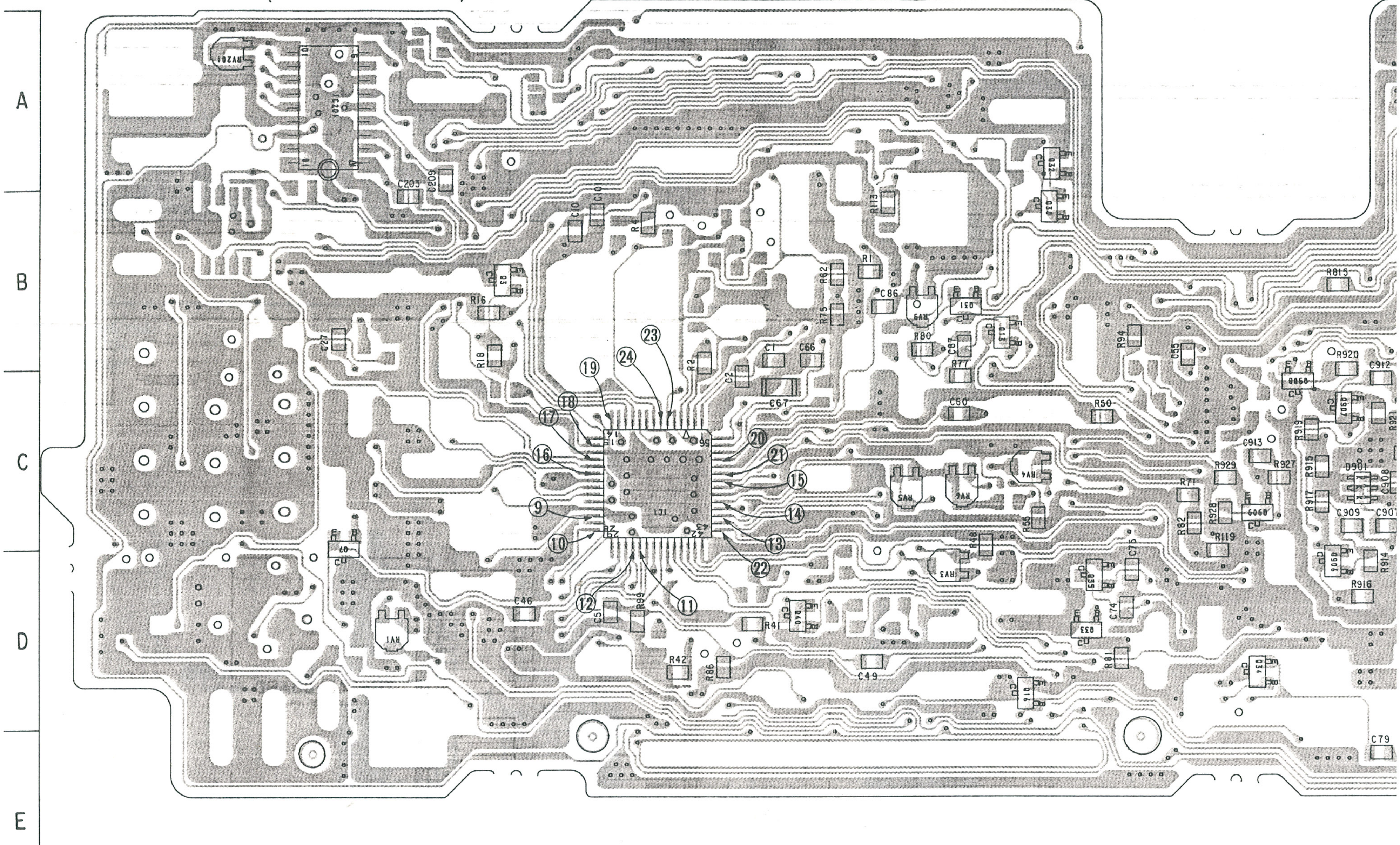
4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

RV-33 (HEADAMP, VIDEO) PRINTED WIRING BOARD

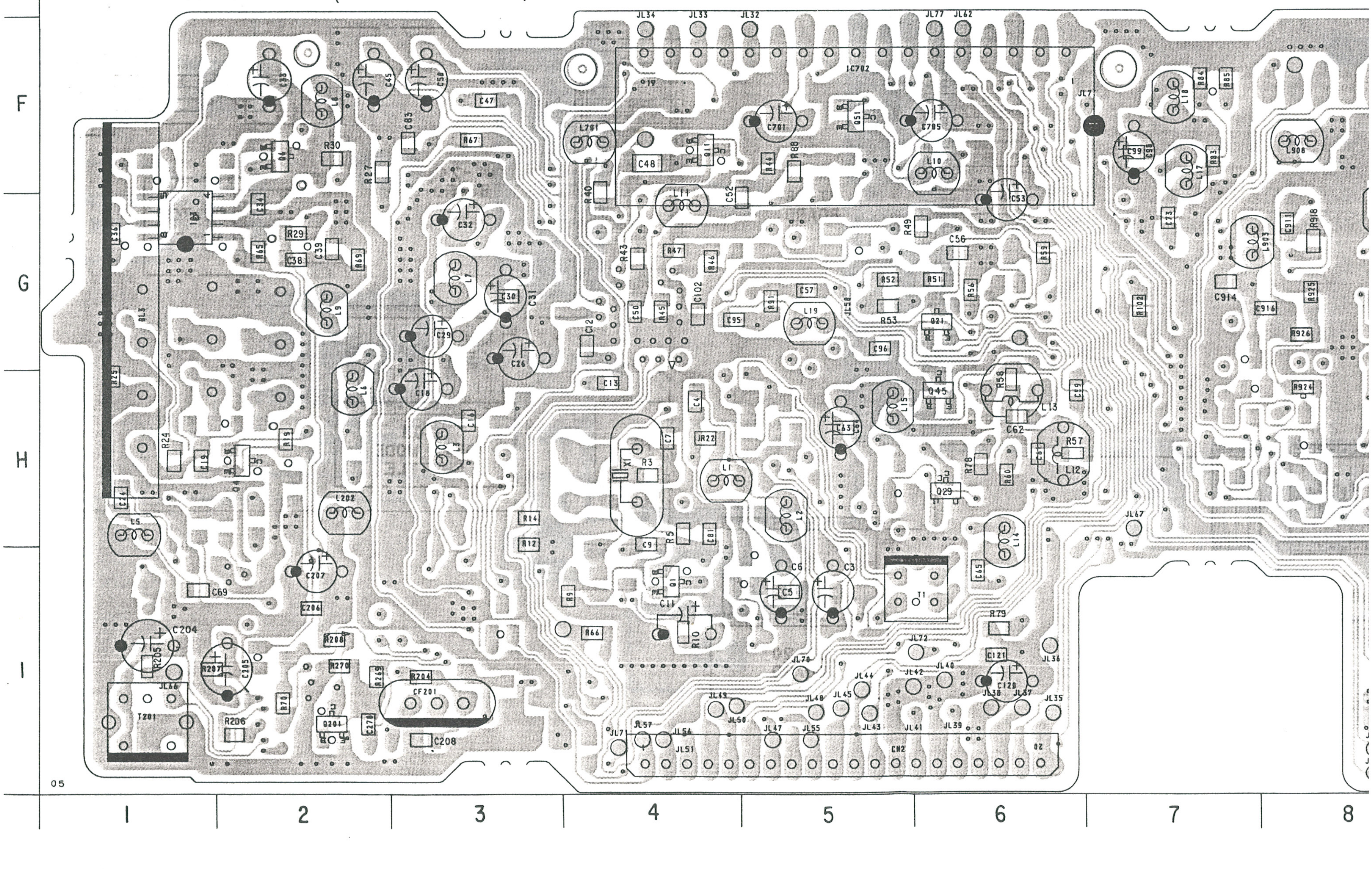
– Ref. No.: RV-33 Board; 1,000 series –

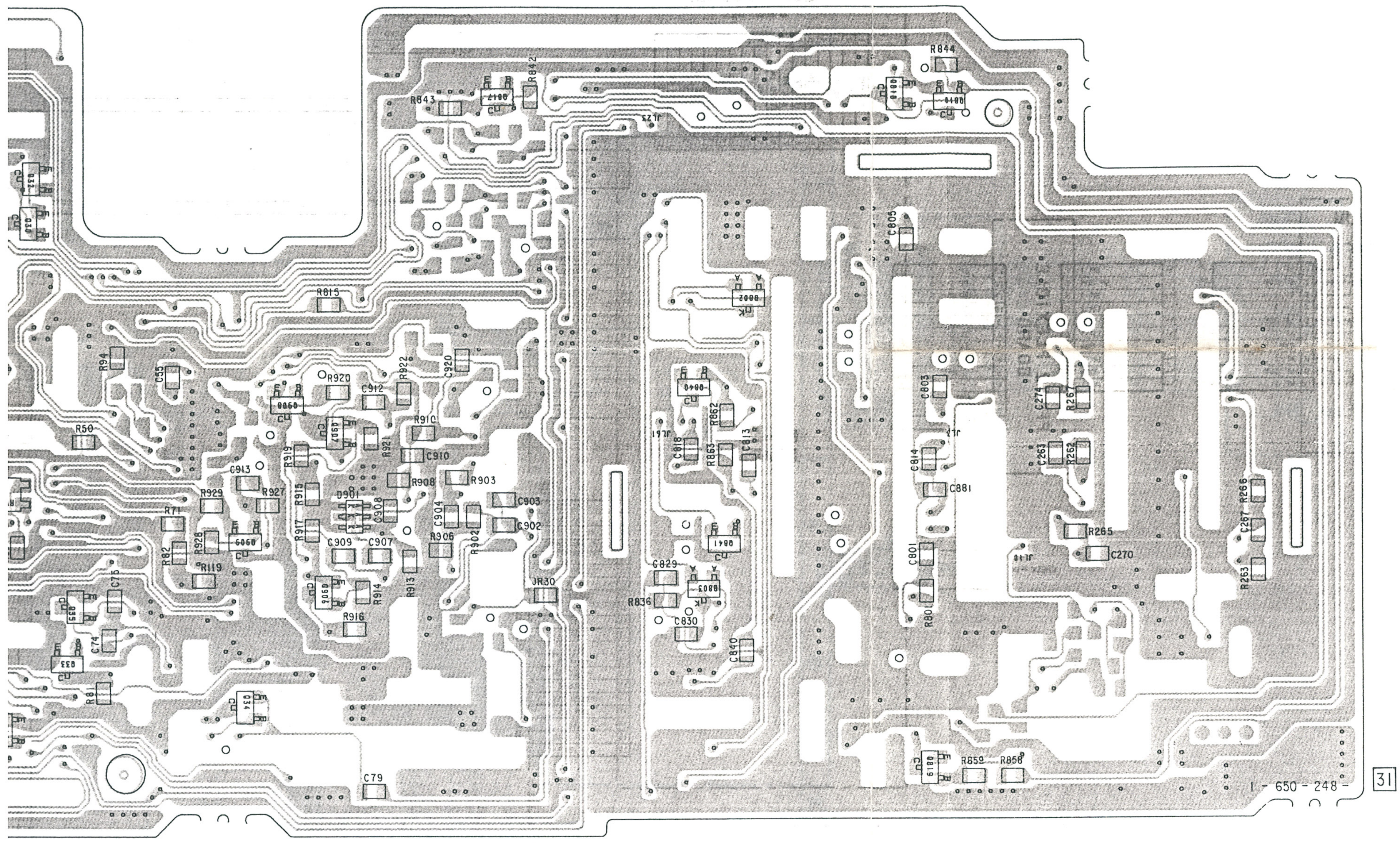
- There is no indication for destination in the printed wiring board diagram.

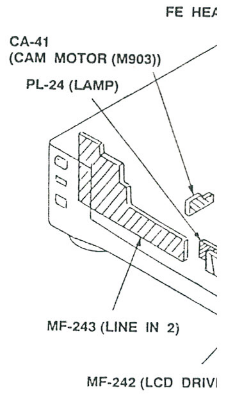
RV-33 BOARD (COMPONENT SIDE)

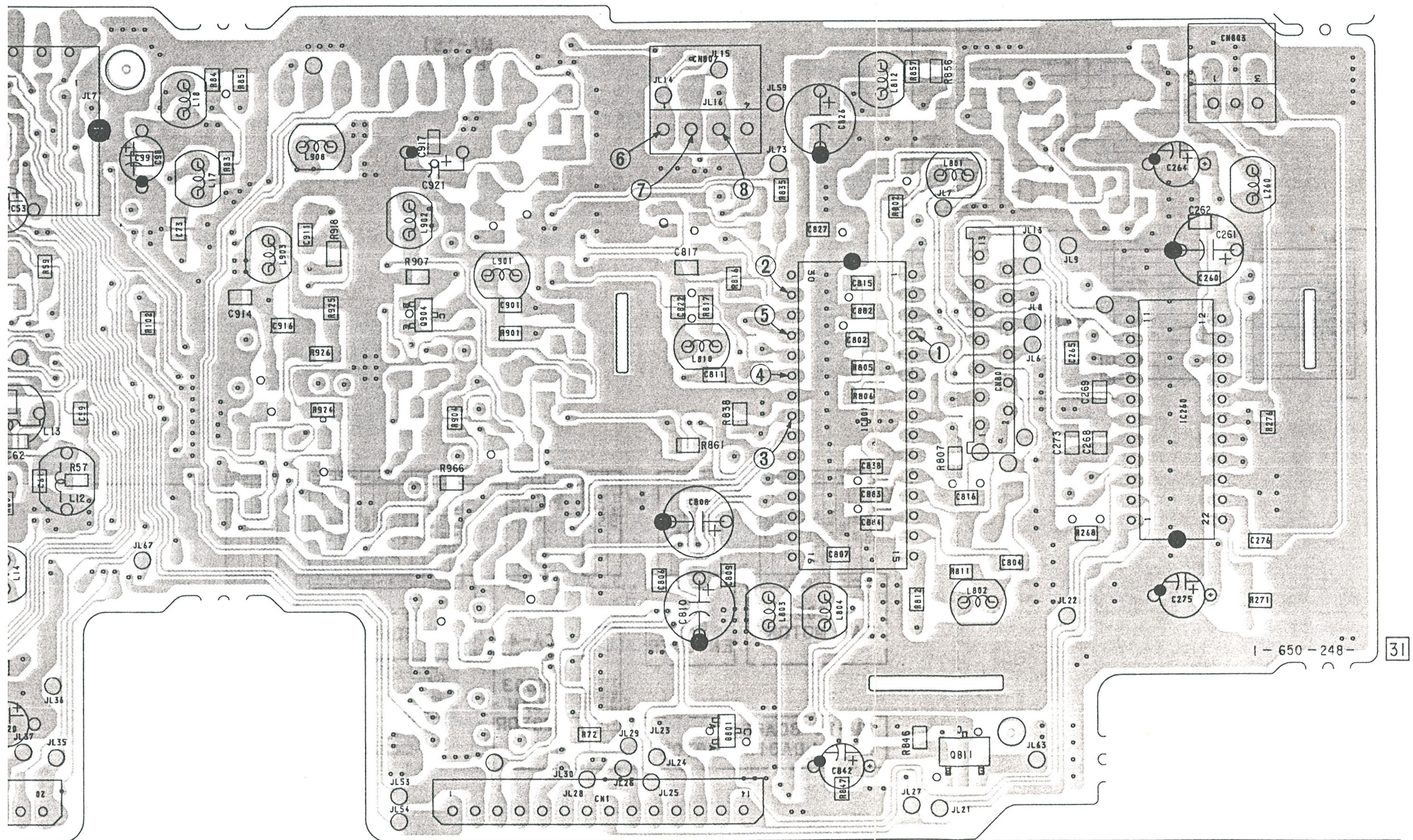

A
B
C
D
E
IC201
C203
C209
C10
C110
R4
R113
Q32
Q30
R1
R62
C86
Q51
R75
C87
R80
R77
Q3
R16
R18
C27
C2
C1
C66
C67
C50
R50
R94
C55
R815
R920
C912
C913
R929
R927
R915
R919
D901
C909
C907
R71
R82
R928
R119
R917
R916
R914
C908
R48
R55
C75
C74
Q53
R81
C34
C46
C51
R99
R41
C49
R42
R86
Q7
RV1
RV3
RV4
IC1
C79
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰
⑱
⑲
⑳
㉑
㉒
㉓
㉔

RV-33 BOARD (CONDUCTOR SIDE)


F
G
H
I
1
2
3
4
5
6
7
8
JL34
JL33
JL32
JL77
JL62
IC702
JL7
L701
C48
L6
C45
C58
C47
R67
R30
C83
R27
C32
R29
C39
C38
R65
C34
IC3
L7
C30
C31
C29
C26
L9
C18
L3
C19
R24
R19
L5
L202
C207
C69
C206
C204
R205
R207
C205
R208
R270
R269
R204
CF201
T201
JL66
R206
Q201
R278
C208
R40
R43
LF1
C52
R44
R88
C701
C705
L10
C53
R49
C56
R59
R47
R46
C102
R45
C50
C12
C13
C4
C7
X1
R3
JR22
L1
L2
C9
R5
C81
R14
R12
R9
R66
Q1
C11
R10
C57
L19
C95
R52
R51
R56
R53
Q21
C96
Q45
L15
R58
L13
C62
C63
R57
L12
R78
Q29
R60
L14
C45
C6
C3
C5
T1
R79
C121
C120
JL72
JL70
JL44
JL42
JL40
JL36
JL35
JL45
JL46
JL49
JL50
JL38
JL37
JL57
JL54
JL51
JL47
JL55
JL43
JL41
JL39
CN2
L18
R84
R85
C99
L908
L17
R83
C73
L903
C911
R918
C914
C916
R925
R926
R924
R103
JL67
05




FE HEA
CA-41
(CAM MOTOR (M903))
PL-24 (LAMP)
MF-243 (LINE IN 2)
MF-242 (LCD DRIV


1 - 650 - 248 -
31
7
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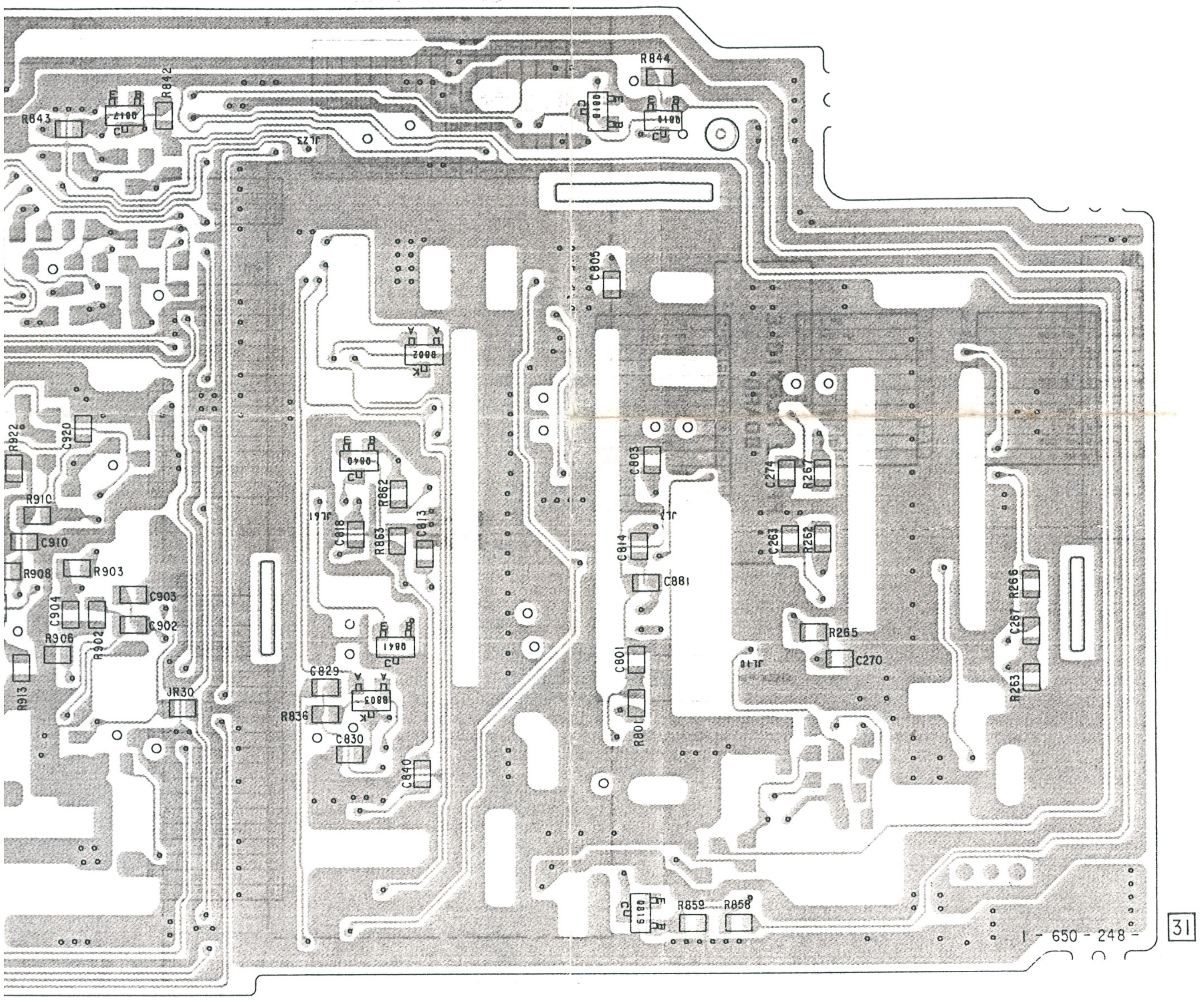
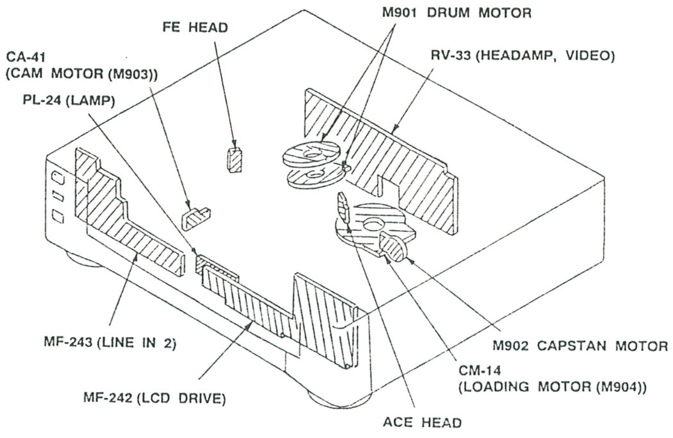
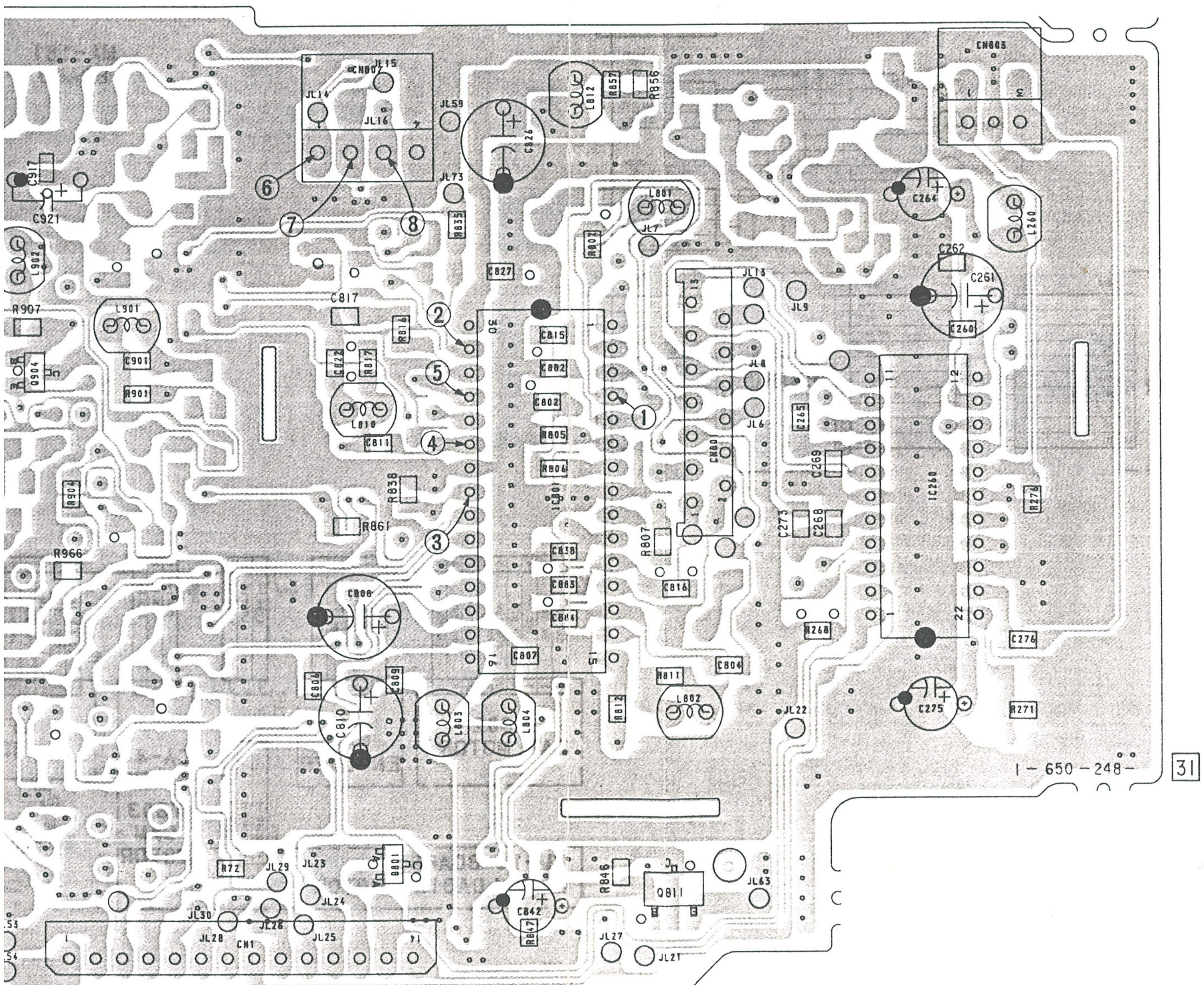
12
13

RV-33 BOARD

CN001	I-9
CN002	I-5
CN801	G-11
CN802	F-10
CN803	F-13
D801	I-10
D802	B-10
D803	D-10
D901	C-8
IC001	C-4
IC003	G-1
IC201	A-2
IC260	G-12
IC702	F-5
IC801	H-11
Q001	I-4
Q003	B-3
Q004	H-2
Q006	F-2
Q007	C-2
Q011	F-4
Q013	B-6
Q016	D-6
Q021	G-6
Q029	H-6
Q030	B-6
Q031	B-6
Q032	A-6
Q033	D-6
Q034	D-7
Q035	D-6
Q040	D-5
Q045	H-6
Q051	F-5
Q201	I-2
Q810	A-11
Q811	I-11
Q817	A-9
Q818	A-11
Q819	D-11
Q840	B-10
Q841	C-10
Q904	G-8
Q906	D-8
Q907	C-8
Q908	C-8
Q909	C-7


R844
R843
R842
C805
C803
C274
R267
C263
R262
R862
C813
C818
R863
C814
C881
R265
C270
R266
C267
R263
C801
R801
C829
R836
C830
C840
C920
R910
C910
R908
R903
C904
C903
C902
R906
R902
R913
JR30
R859
R858
1 - 650 - 248 -
31


FE HEAD
M901 DRUM MOTOR
CA-41
(CAM MOTOR (M903))
RV-33 (HEADAMP, VIDEO)
PL-24 (LAMP)
MF-243 (LINE IN 2)
M902 CAPSTAN MOTOR
CM-14
(LOADING MOTOR (M904))
MF-242 (LCD DRIVE)
ACE HEAD


CN802
JL15
JL14
JL16
CN803
R857
R856
L812
C824
JL59
JL73
C917
C921
6
7
8
R835
L801
JL7
C264
L260
C262
C261
C260
L902
R907
L901
C901
R901
Q904
C817
C822
R817
R816
L810
C811
2
5
4
3
1
C827
C815
C802
C802
R805
R804
IC801
R838
R861
R807
C816
JL13
JL9
JL4
JL6
CN801
C265
C269
C273
C268
IC260
R270
R966
C808
C838
C863
C864
C807
R268
C276
C810
R806
C809
L803
L804
R811
L802
C804
R812
JL22
C275
R271
1 - 650 - 248 -
31
R72
JL29
JL23
D801
R846
Q811
JL63
JL30
JL26
JL24
C842
JL28
CN1
JL25
JL27
JL21
9
10
11
12
13

RV-33 BOARD

CN001	I-9
CN002	I-5
CN801	G-11
CN802	F-10
CN803	F-13
D801	I-10
D802	B-10
D803	D-10
D901	C-8
IC001	C-4
IC003	G-1
IC201	A-2
IC260	G-12
IC702	F-5
IC801	H-11
Q001	I-4
Q003	B-3
Q004	H-2
Q006	F-2
Q007	C-2
Q011	F-4
Q013	B-6
Q016	D-6
Q021	G-6
Q029	H-6
Q030	B-6
Q031	B-6
Q032	A-6
Q033	D-6
Q034	D-7
Q035	D-6
Q040	D-5
Q045	H-6
Q051	F-5
Q201	I-2
Q810	A-11
Q811	I-11
Q817	A-9
Q818	A-11
Q819	D-11
Q840	B-10
Q841	C-10
Q904	G-8
Q906	D-8
Q907	C-8
Q908	C-8
Q909	C-7

RV-33 (HEADAMP, VIDEO) SCHEMATIC DIAGRAM

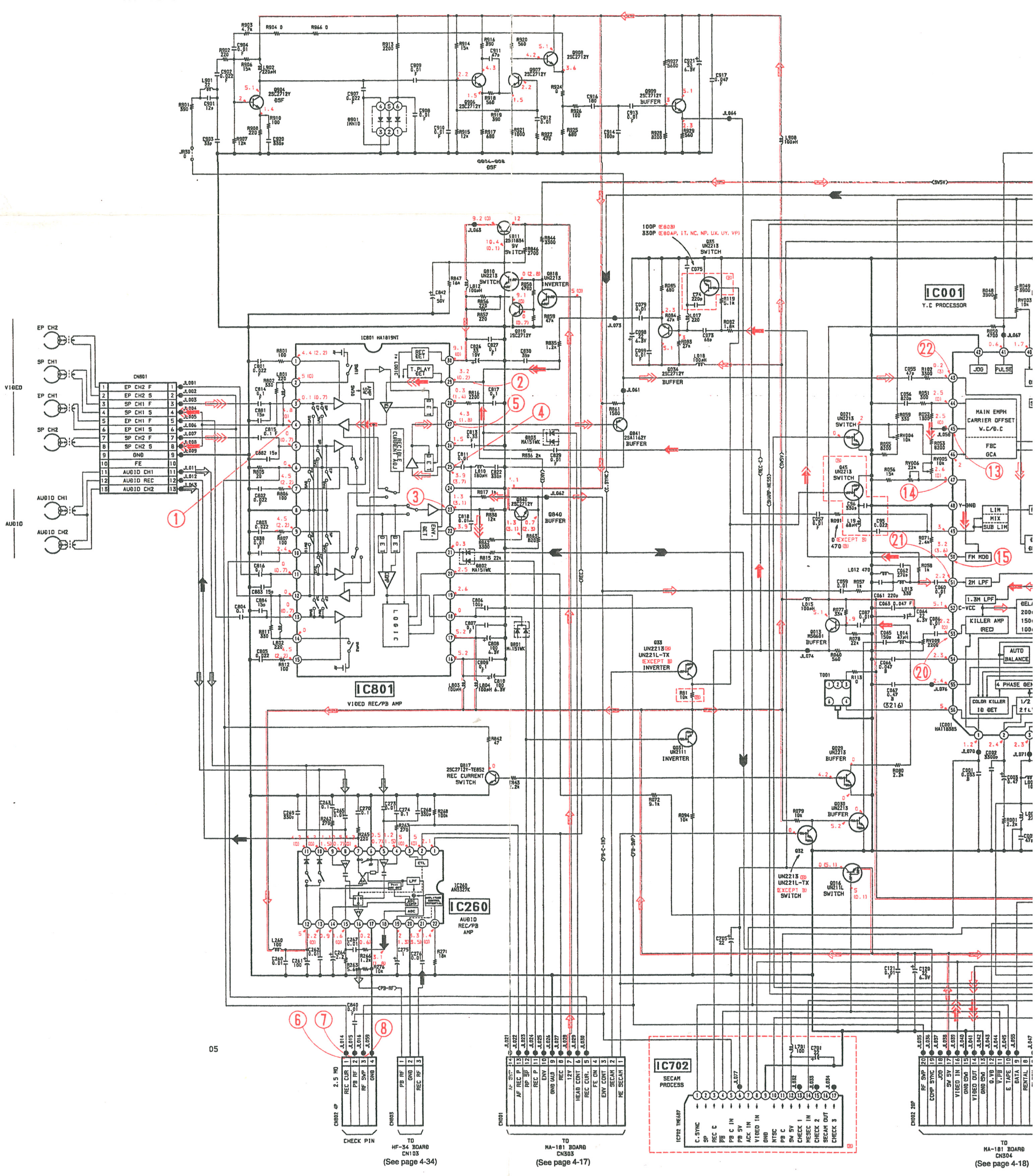
– Ref. No.: RV-33 Board; 1,000 series –

- Signal path

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡➡	➡➡➡	➡
PB	⇨	⇨⇨	⇨⇨⇨	⇨

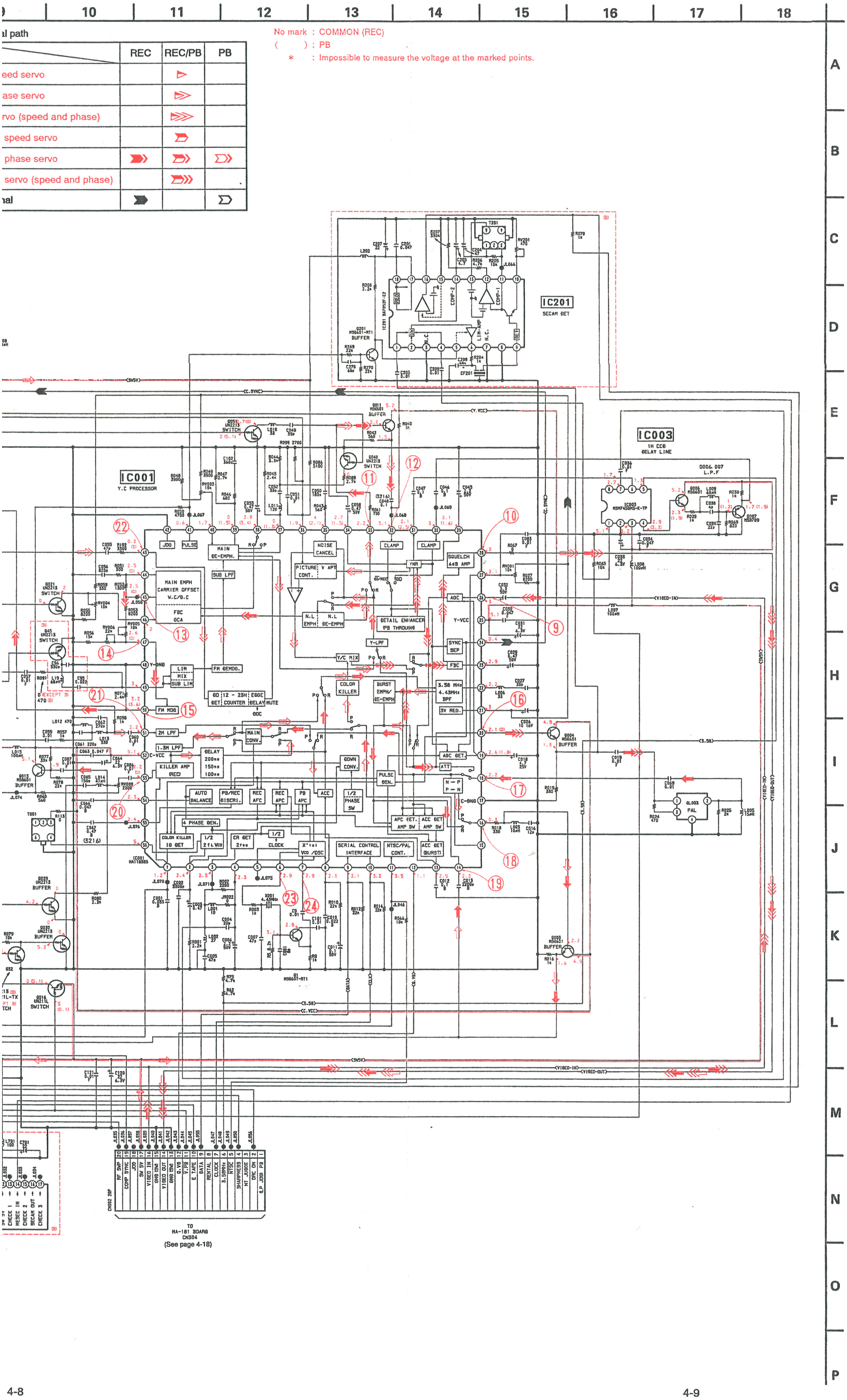
- Signal path

	REC	REC/PB
Drum speed servo		▷
Drum phase servo		▷▷
Drum servo (speed and phase)		▷▷▷
Capstan speed servo		⊳
Capstan phase servo	➡➡	⊳⊳
Capstan servo (speed and phase)		⊳⊳⊳
Ref. signal	➡	

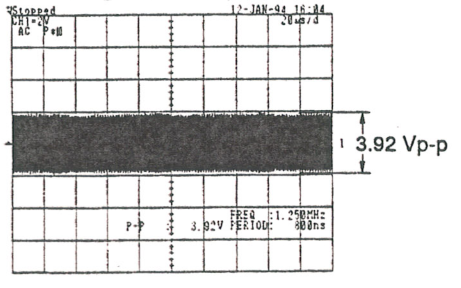

RV-33 BOARD
EP CH2
SP CH1
EP CH1
SP CH2
VIDEO
AUDIO CH1
AUDIO CH2
AUDIO
CN801
IC801 HA11819NT
IC801
VIDEO REC/PB AMP
IC260 AN3327K
IC260
AUDIO REC/PB AMP
IC001
Y.C PROCESSOR
IC702
SECAM PROCESS
Q840 BUFFER
Q841 2SA1162Y BUFFER
Q34 2SC2712Y BUFFER
Q33 UN2213 UN221L-TX (EXCEPT B) INVERTER
Q31 UN2111 INVERTER
Q29 UN2213 BUFFER
Q30 UN2213 BUFFER
Q32 UN2213 UN221L-TX (EXCEPT B) SWITCH
Q16 UN211L SWITCH
Q817 2SC2712Y-TE85L REC CURRENT SWITCH
Q810 UN2213 SWITCH
Q818 UN2213 INVERTER
Q21 UN2213 SWITCH
Q45 UN2213 SWITCH
Q13 M56601 BUFFER
MAIN EMPH
CARRIER OFFSET
W.C/D.C
FBC
GCA
LIM
MIX
SUB LIM
FM MOD
2M LPF
1.3M LPF
KILLER AMP
AUTO BALANCE
COLOR KILLER
ID DET
4 PHASE GEN
CHECK PIN
TO HF-34 BOARD CN103
(See page 4-34)
TO MA-181 BOARD CN303
(See page 4-17)
TO MA-181 BOARD CN304
(See page 4-18)
1
2
3
4
5
6
7
8
13
14
15
20
21
22
05
1 2 3 4 5 6 7 8 9 10 11
A B C D E F G H I J K L M N O P

al path	REC	REC/PB	PB
eed servo		▷	
ase servo		▷▷	
rvo (speed and phase)		▷▷▷	
speed servo		▷	
phase servo	➤➤	▷▷	▷▷
servo (speed and phase)		▷▷	
al	➤		▷

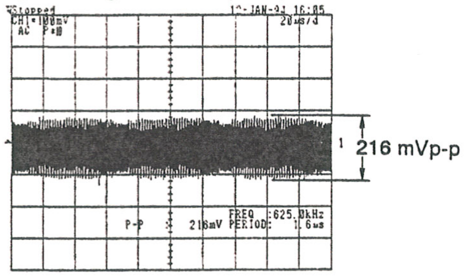
No mark : COMMON (REC)
( ) : PB
* : Impossible to measure the voltage at the marked points.


9
10
11
12
13
14
15
16
17
18
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
IC201
SECAM DET
T201
IC201 BA7029F-E2
COMP-2
COMP-1
LIM-AMP
N.C
Q201 M56601-RT1 BUFFER
CF201
IC003
1H CCD DELAY LINE
IC003 MSM7450RS-K-TP
D006, 007 L.P.F
Q006 M56601
Q007 M58799
IC001
Y.C PROCESSOR
IC001 HA118585
Q011 M56601 BUFFER
Q051 UN2213 SWITCH
Q049 UN2213 SWITCH
Q021 UN2213 SWITCH
Q45 UN2213 SWITCH
Q013 M56601 BUFFER
Q029 UN2213 BUFFER
Q030 UN2213 BUFFER
Q016 UN2111 SWITCH
Q004 M56601 BUFFER
Q003 M56601 BUFFER
Q1 M56601-RT1
JOG
PULSE
MAIN DE-EMPH.
SUB LPF
MAIN EMPH CARRIER OFFSET W.C/D.C
FBC DCA
LIM MIX SUB LIM
FM DEMOD.
FM MOD
DD 1/2 - 2.3H EDGE DET COUNTER DELAY MUTE
2H LPF
1.3M LPF
MAIN CONV.
DELAY 200ns 150ns 100ns
KILLER AMP (REC)
AUTO BALANCE
PB/REC DISCRI.
REC AFC
REC APC
PB APC
ACC
1/2 PHASE SW
4 PHASE GEN.
COLOR KILLER ID DET
1/2 2 f LVCO
CR DET 2 fsc
1/2 CLOCK
X'tal VCO /OSC
SERIAL CONTROL INTERFACE
NTSC/PAL CONT.
ACC DET (BURST)
NOISE CANCEL
PICTURE CONT.
V APT
N.L EMPH
N.L DE-EMPH
DETAIL ENHANCER PB THROUGH
Y-LPF
Y/C MIX
COLOR KILLER
BURST EMPH/ DE-EMPH
DOWN CONV.
PULSE GEN.
APC DET AMP SW
ACC DET AMP SW
CLAMP
CLAMP
SQUELCH 6dB AMP
AGC
Y-VCC
SYNC SEP
FBC
3.58 MHz 4.43MHz BPF
5V REG.
AGC DET
ATT
N → P P → N
C-GND
Y-GND
C-VCC
X001 4.43MHz
PAL
T001
(SVSV)
(C.SYNC)
(Y.VCC)
(VIDEO-IN)
(VIDEO-OUT)
(3.58)
(C.VCC)
(DATA)
(CLK)
(S.VB)
RF SWP
COMP SYNC
JOG
SW 5V
VIDEO IN
GND (SW)
VIDEO OUT
GND (SW)
D.VD
V.PB
E TAPE
DATA
RENTAL
CLOCK
3.58MHz
NTSC
SHARPNESS
NT JUDGE
DRC ON
LP JOG) PB
CN002 20P
TO MA-181 BOARD CN304 (See page 4-18)
CHECK 1 IN
MESECAM CHECK 2
SECAM OUT CHECK 3

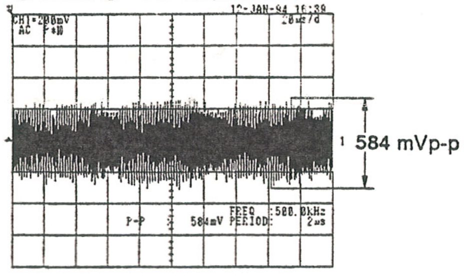
❶ IC801 ④ REC 20 μsec/DIV



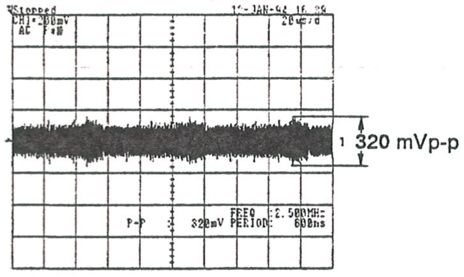
❷ IC801 ㉙ REC 20 μsec/DIV



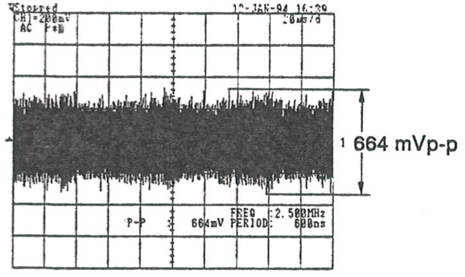
❸ IC801 ㉓ PB 20 μsec/DIV



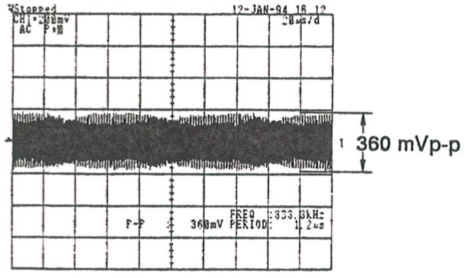
❹ IC801 ㉕ PB 20 μsec/DIV



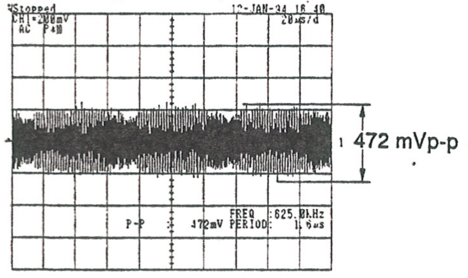
❺ IC801 ㉗ PB 20 μsec/DIV



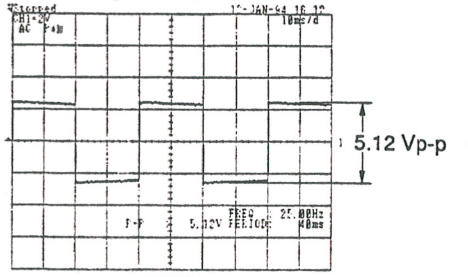
❻ CN802 ① REC 20 μsec/DIV



❼ CN802 ② PB 20 μsec/DIV

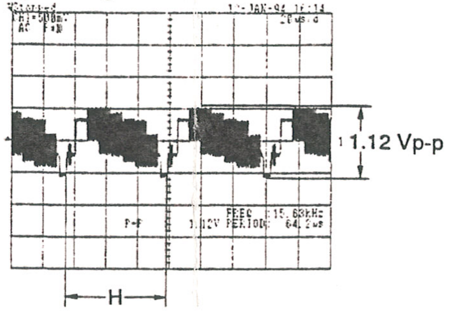


❽ CN802 ③ REC/PB

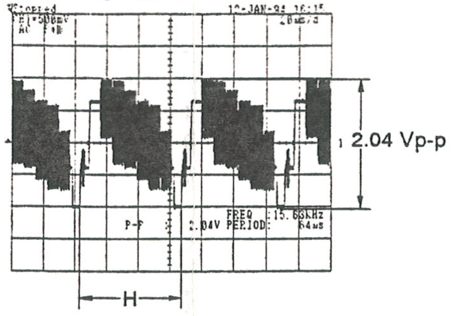


25 Hz

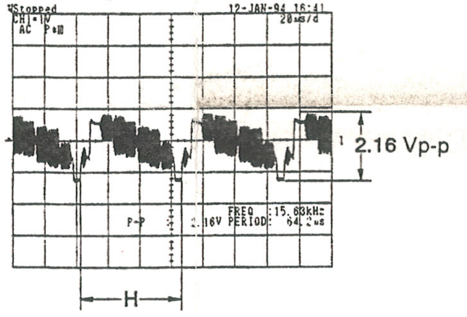
❾ IC001 ㉖ REC



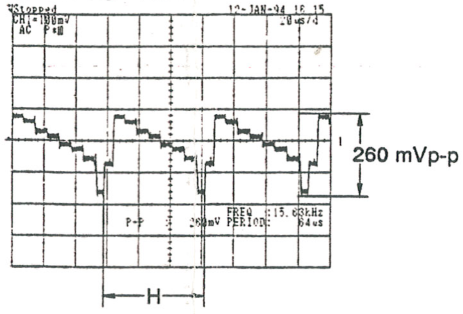
❿ IC001 ㉘ REC



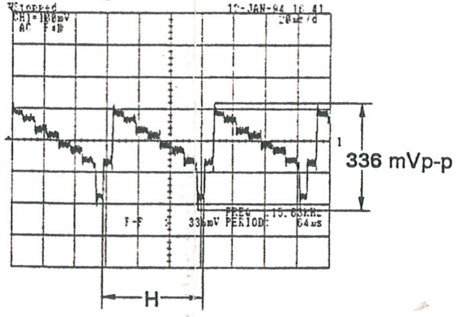
❿ IC001 ㉘ PB



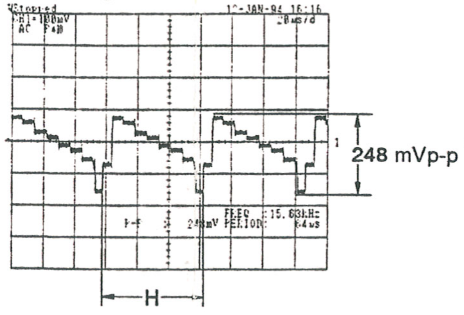
⓫ IC001 ㉝ REC



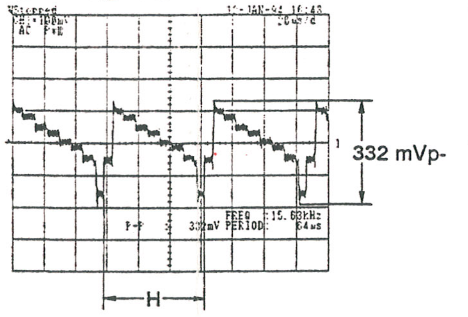
⓫ IC001 ㉝ PB



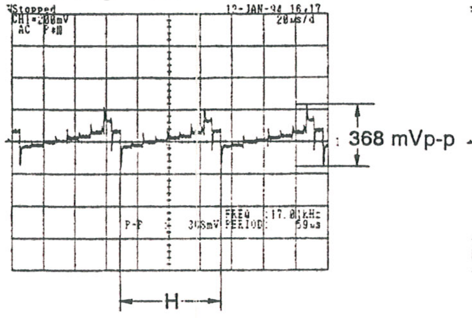
⓬ IC001 ㉜ REC



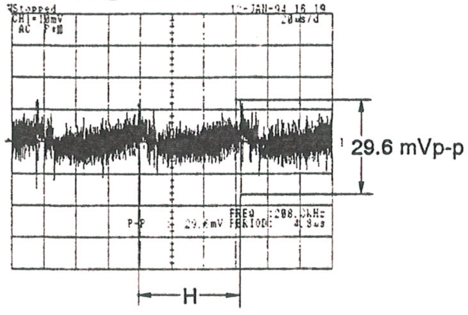
⓬ IC001 ㉜ PB



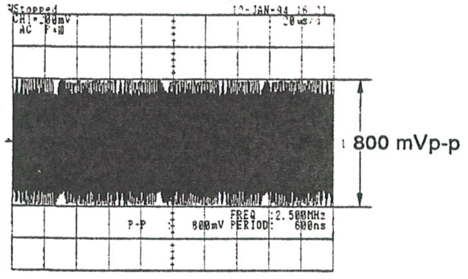
⓭ IC001 ㊺ REC



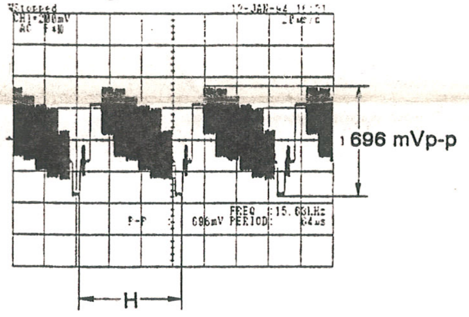
⓮ IC001 ㊼ REC



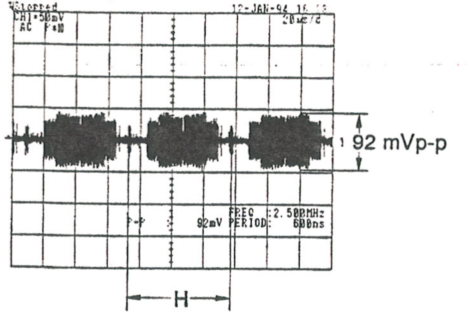
⓯ IC001 ㊿ REC 20 μsec/DIV



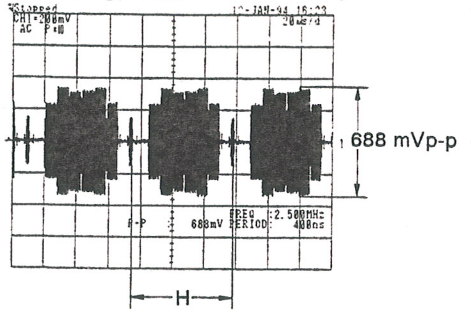
⓰ IC001 ⑳ REC



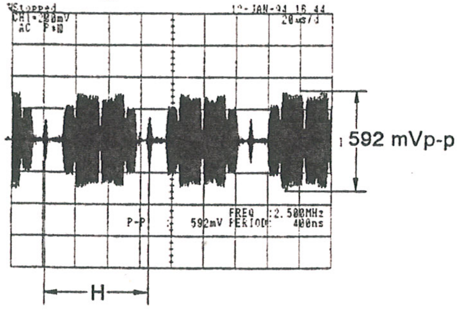
⓱ IC001 ⑱ REC



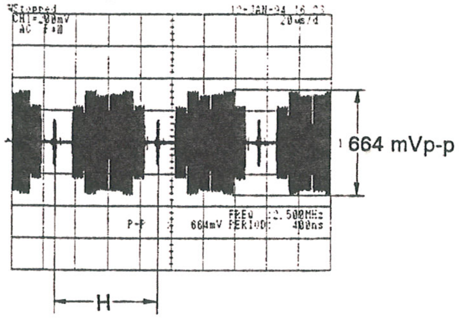
⓲ IC001 ⑯ REC



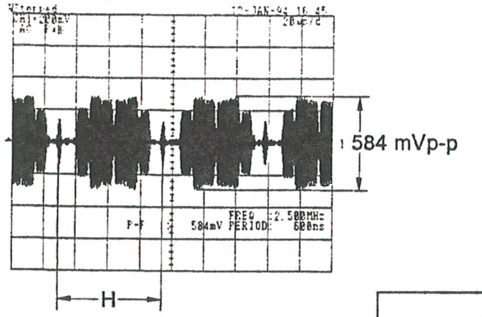
⓲ IC001 ⑯ PB



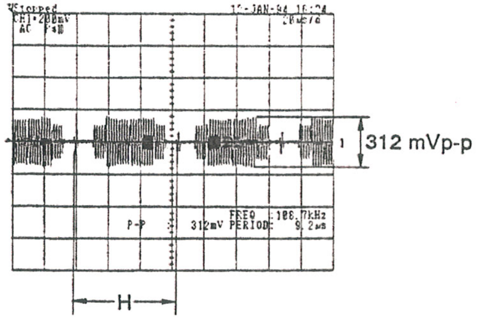
⓳ IC001 ⑭ REC



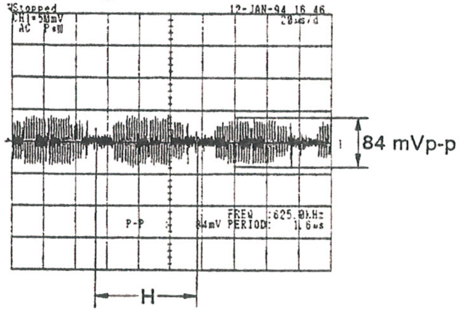
⓳ IC001 ⑭ PB



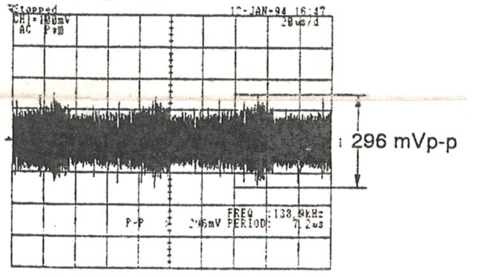
⓴ IC001 (53) REC



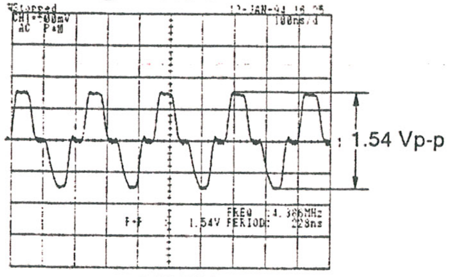
(21) IC001 (51) PB



(22) IC001 ㊸ PB

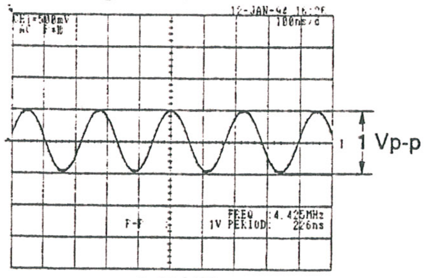


(23) IC001 ⑥ REC/PB



4.43 MHz

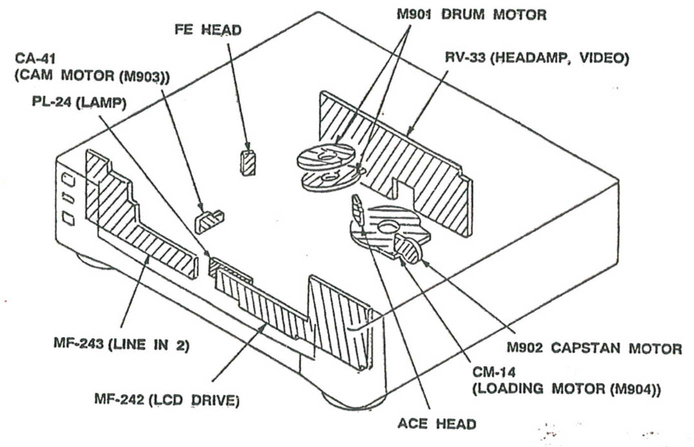
(24) IC001 ⑦ REC/PB

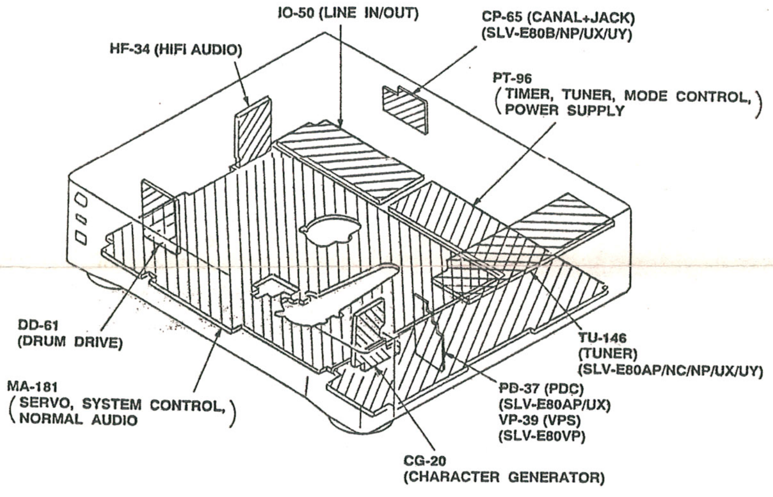


4.43 MHz

MA-181 (SERVO, SYSTEM CONTROL, NORMAL AUDIO), MF-243 (LINE IN 2), DD-61 (DRUM DRIVE) PRINTED WIRING BOARDS

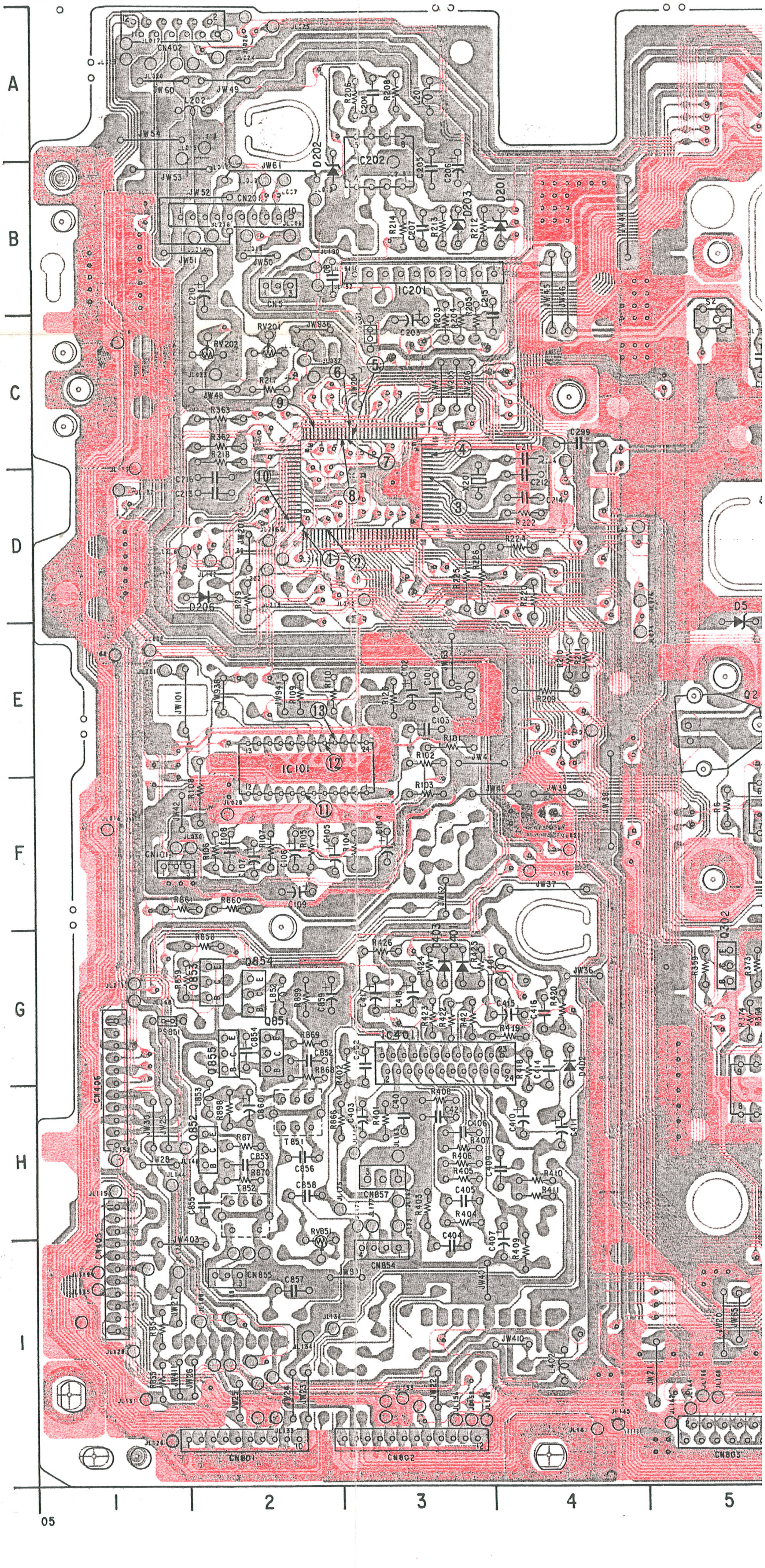
– Ref. No.: MA-181 and DD-61 Boards; 2,000 series, MF-243 Board; 5,000 series –


FE HEAD
M901 DRUM MOTOR
RV-33 (HEADAMP, VIDEO)
CA-41
(CAM MOTOR (M903))
PL-24 (LAMP)
MF-243 (LINE IN 2)
MF-242 (LCD DRIVE)
M902 CAPSTAN MOTOR
CM-14
(LOADING MOTOR (M904))
ACE HEAD


IO-50 (LINE IN/OUT)
CP-65 (CANAL+JACK)
(SLV-E80B/NP/UX/UY)
HF-34 (HIFI AUDIO)
PT-96
(TIMER, TUNER, MODE CONTROL, POWER SUPPLY)
DD-61
(DRUM DRIVE)
TU-146
(TUNER)
(SLV-E80AP/NC/NP/UX/UY)
MA-181
(SERVO, SYSTEM CONTROL, NORMAL AUDIO)
PD-37 (PDC)
(SLV-E80AP/UX)
VP-39 (VPS)
(SLV-E80VP)
CG-20
(CHARACTER GENERATOR)

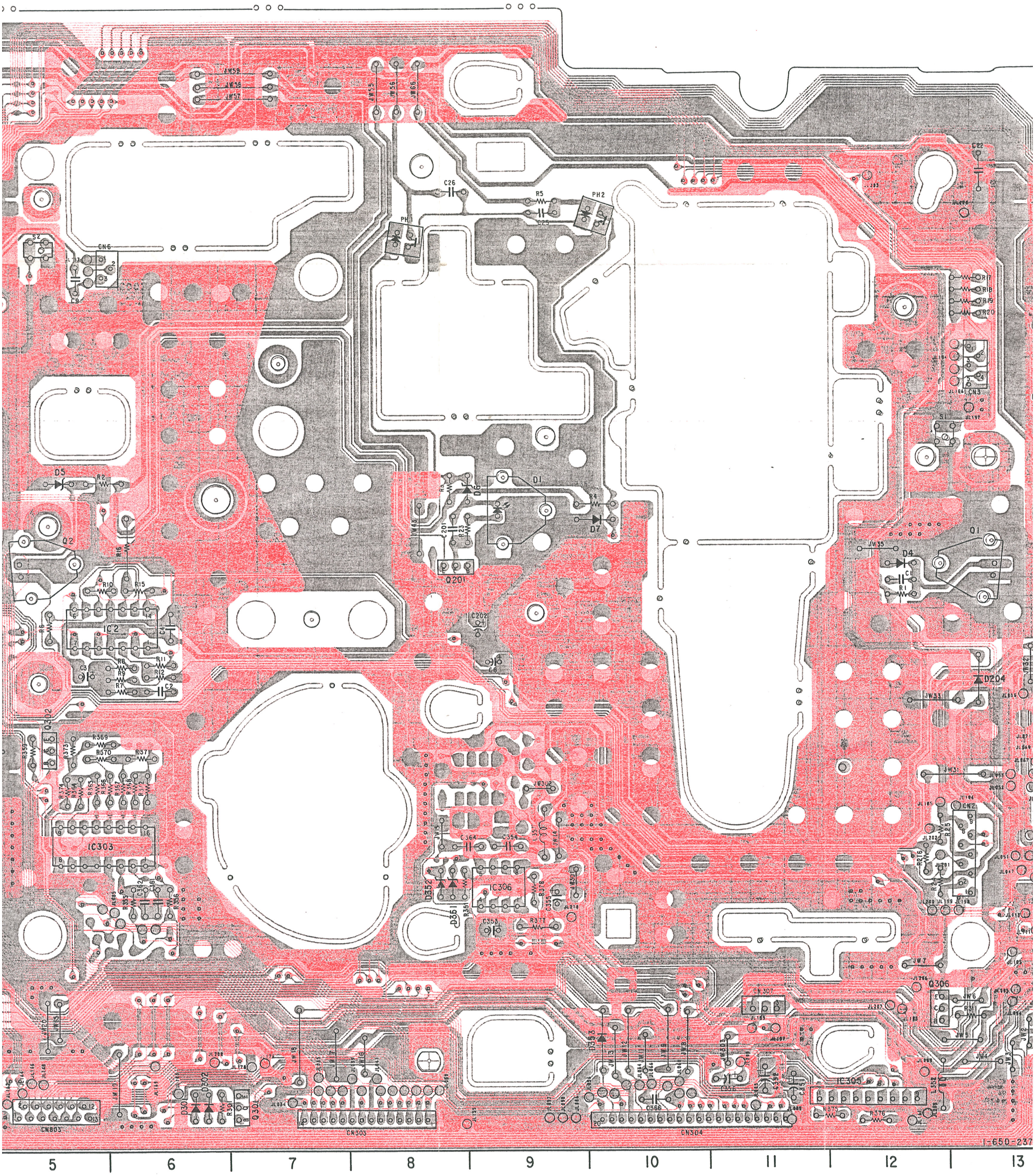
- There is no indication for destination in the printed wiring board diagram.

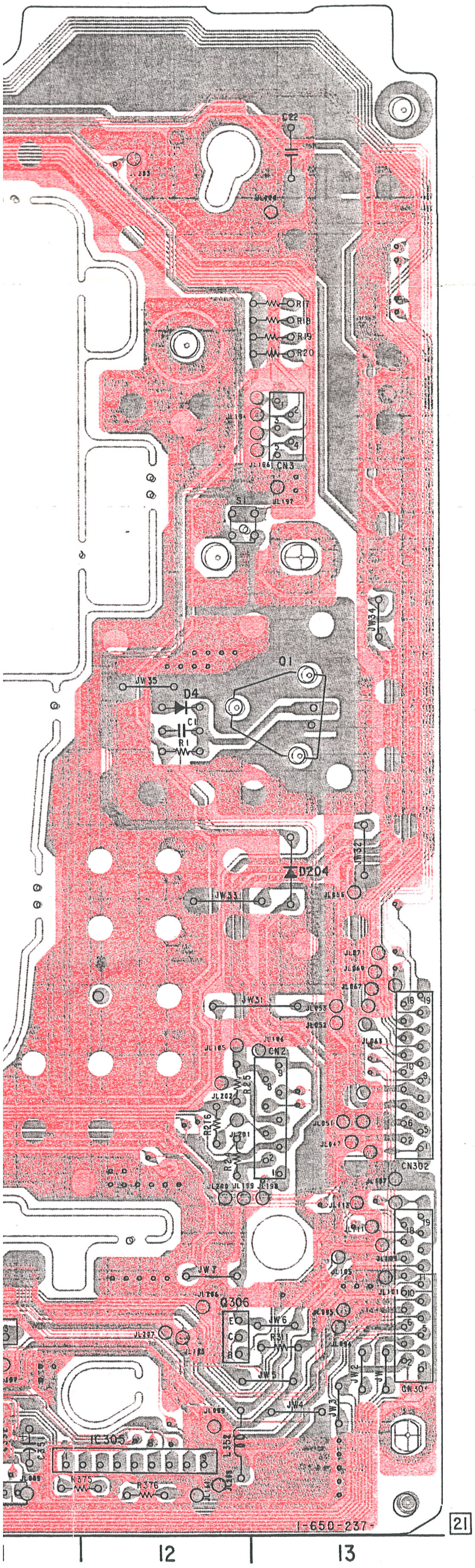
MA-181 BOARD


A
B
C
D
E
F
G
H
I
1
2
3
4
5
05
CN402
CN201
CN5
IC201
IC101
IC401
CN406
CN405
CN801
CN802
CN803
CN854
CN855
CN857
CN101

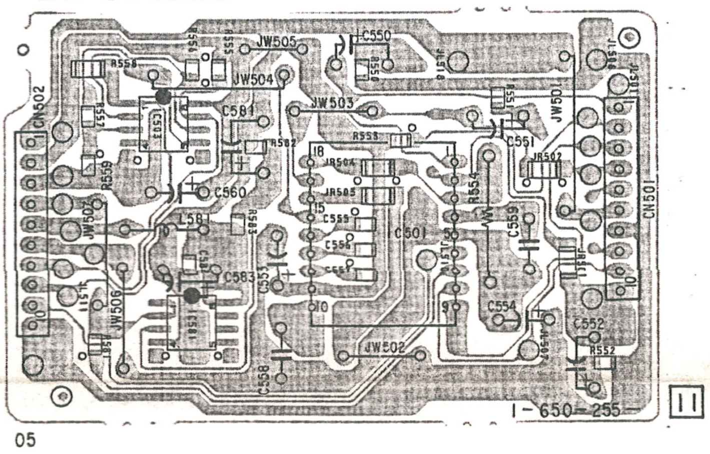
MA-181 BOARD

CN002	G-13
CN003	D-13
CN005	B-2
CN006	C-6
CN101	F-1
CN201	B-2
CN301	I-13
CN302	H-13
CN303	I-7
CN304	I-10
CN307	I-11
CN402	A-1
CN405	I-1
CN406	H-1
CN801	I-2
CN802	I-3
CN803	I-5
CN854	I-3
CN855	I-2
CN857	H-3
D001	E-9
D004	E-12
D005	D-5
D006	E-8
D007	E-10
D201	B-4
D202	A-2
D203	B-3
D204	F-13
D206	D-2
D301	I-6
D302	I-6
D351	H-8
D352	H-8
D353	I-10
D401	G-3
D402	G-4
D403	G-3
IC002	F-6
IC101	E-2
IC201	B-3
IC202	B-3
IC203	D-3
IC303	H-5
IC305	I-12
IC306	H-9
IC401	G-3
Q001	F-13
Q002	E-5
Q201	E-8
Q301	I-7
Q302	G-5
Q306	I-12
Q851	G-2
Q852	H-2
Q853	G-1
Q854	G-2
Q855	G-2

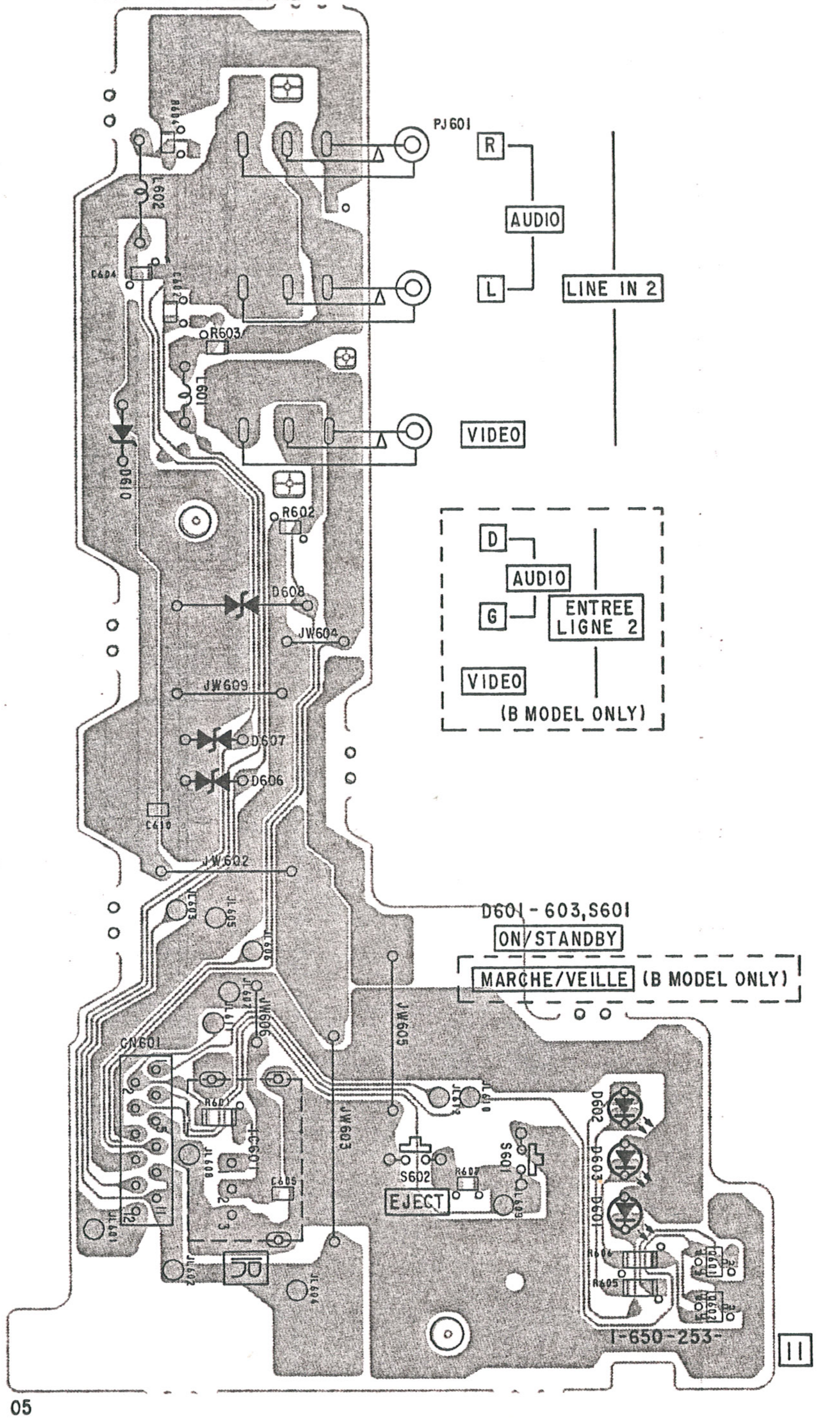

JW58
JW57
JW55
JW56
JW66
C26
R5
C25
PH1
PH2
C22
S2
CN6
C9
R17
R18
R19
R20
CN3
S1
D5
R2
Q2
R16
R10
R15
IC2
R6
C4
C3
R8
R11
R7
R12
C2
R3
D6
D1
R4
D7
JW45
C201
R23
Q201
C202
C8
JW35
D4
C1
R1
Q1
D204
JW32
JW33
Q302
R369
R370
R371
R373
R359
IC303
JW31
CN2
R225
R216
C366
C354
IC306
D352
D351
R351
C353
R377
R378
Q306
JW6
R311
JW5
JW4
JW7
JW65
JW20
D301
D302
R302
Q301
CN803
CN303
D353
JW13
C356
CN307
CN304
IC305
R375
R376
1-650-237
5
6
7
8
9
10
11
12
13


C22
R17
R18
R19
R20
CN3
S1
JW34
Q1
JW35
D4
C1
R1
D204
JW32
JW33
JW31
CN2
R216
R25
CN302
JW7
Q306
JW6
R311
JW5
JW4
JW3
JW2
CN301
IC305
R375
R376
1-650-237-
21
12
13

DD-61 BOARD


JW505
C550
JW504
R558
C581
JW503
JW501
CN502
R559
C560
C591
JW502
L581
C563
C561
R554
C559
CN501
JW506
C554
C552
R552
C558
JW502
05
1-650-255
11

MF-243 BOARD

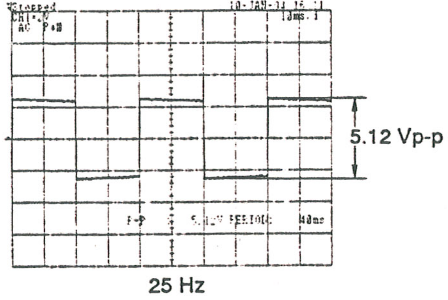

PJ601
R
AUDIO
L
LINE IN 2
VIDEO
R603
R602
D610
D608
JW604
D
AUDIO
G
ENTREE LIGNE 2
VIDEO
(B MODEL ONLY)
JW609
D607
D606
JW602
D601 - 603,S601
ON/STANDBY
MARCHE/VEILLE
(B MODEL ONLY)
CN601
JW603
JW605
S602
EJECT
S601
D602
D603
D601
05
1-650-253-
11

MA-181 (SERVO, SYSTEM CONTROL, NORMAL AUDIO), MF-243 (LINE IN 2), DD-61 (DRUM DRIVE) SCHEMATIC DIAGRAM

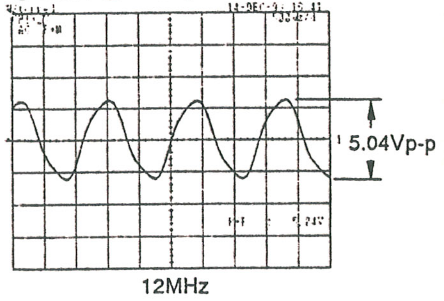
– Ref. No.: MA-181 and DD-61 Boards; 2,000 series, MF-243 Board; 5,000 series –

MA-181 BOARD

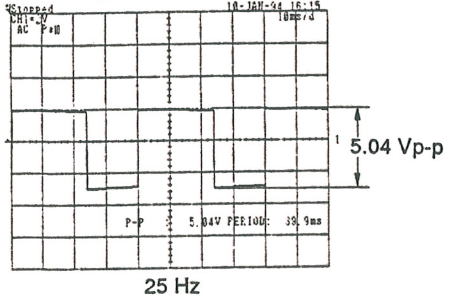
❶ IC203 ① REC/PB



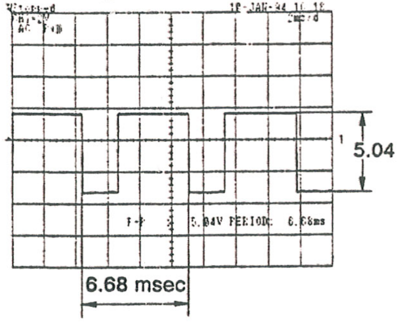
❸ IC203 ㊷ REC/PB



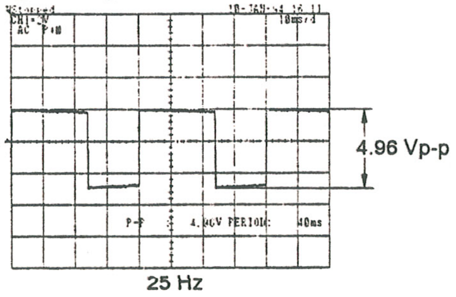
❺ IC203 (67) PB



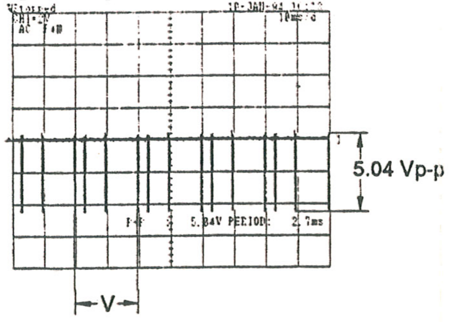
❼ IC203 (69) REC/PB



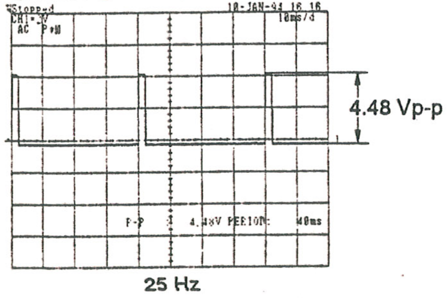
❷ IC203 ⑦ REC



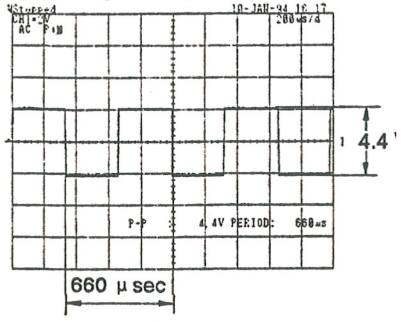
❹ IC203 ㊼ REC/PB

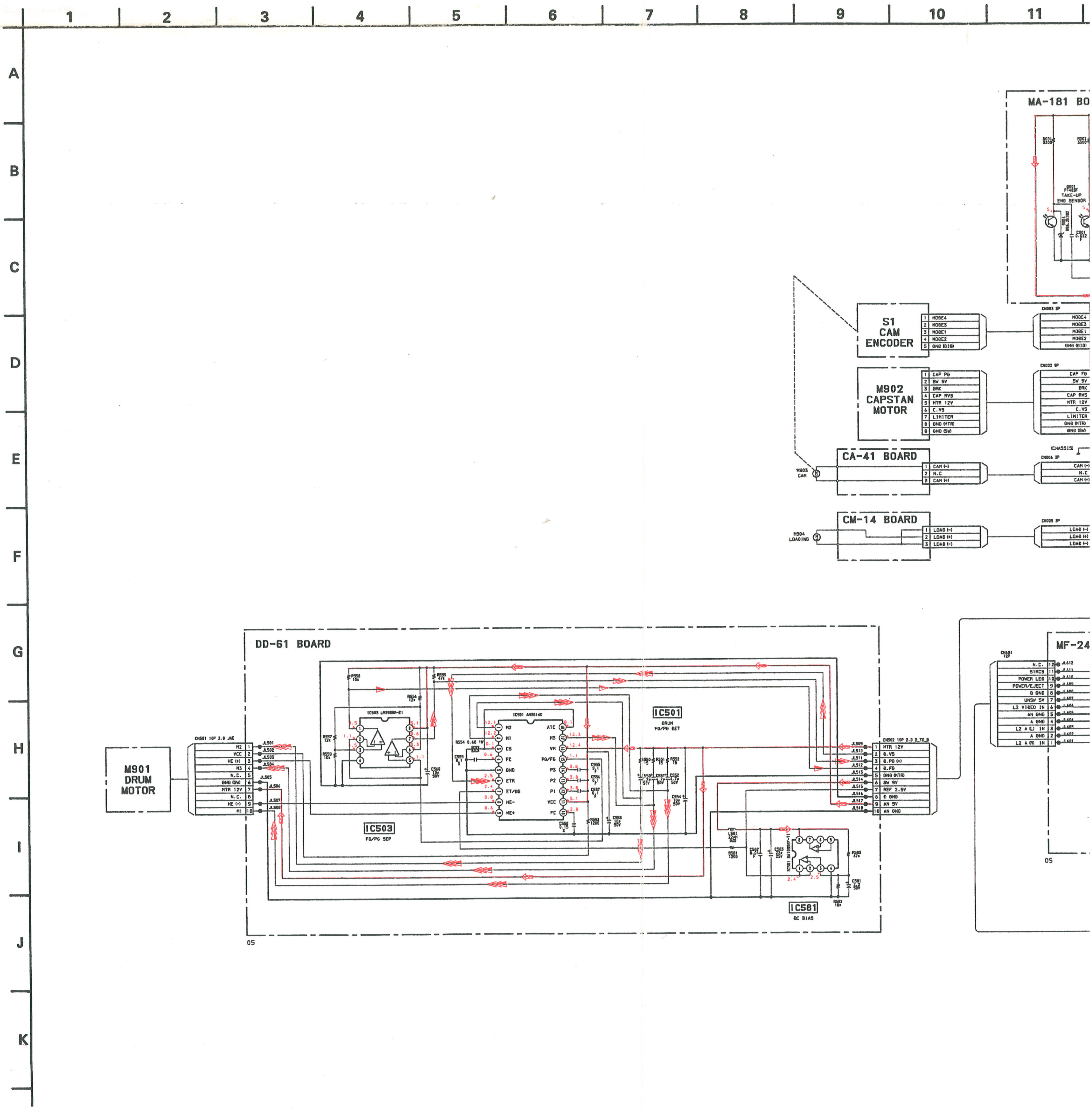


❻ IC203 (68) REC/PB



❽ IC203 (70) REC/PB





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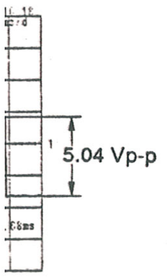
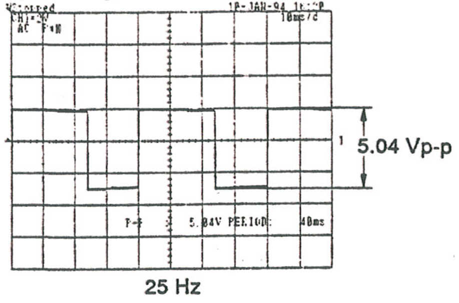
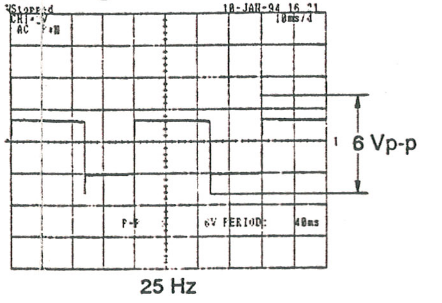
K
MA-181 BO
S1 CAM ENCODER
MODE4
MODE3
MODE1
MODE2
GND (D10)
M902 CAPSTAN MOTOR
CAP FG
SW 5V
BRK
CAP RVS
MTR 12V
C.VS
LIMITER
GND (MTR)
GND (SW)
CA-41 BOARD
M903 CAM
CAM (-)
N.C
CAM (+)
CM-14 BOARD
M904 LOADING
LOAD (-)
LOAD (+)
LOAD (-)
DD-61 BOARD
M901 DRUM MOTOR
CN501 10P
M2
VCC
HE (+)
M3
N.C.
GND (SW)
MTR 12V
N.C.
HE (-)
M1
IC503 FG/PG SEP
IC501 DRUM FG/PG DET
IC581 DC BIAS
CN502 10P
MTR 12V
G.VS
G.PG (+)
G.FG
GND (MTR)
SW 5V
REF 2.5V
D GND
AN 5V
AN GND
MF-24
N.C.
SIRCS
POWER LED
POWER/EJECT
D GND
UNSW 5V
L2 VIDEO IN
AN GND
A GND
L2 A (L) IN
A GND
L2 A (R) IN
05
05



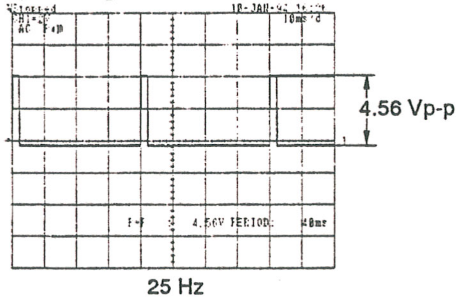
⑨IC203 ⑰ REC/PB



⑪IC101 ⑦ REC



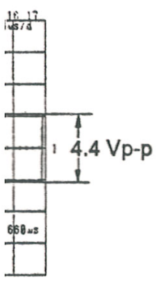
⑬IC101 ㉑ REC/PB



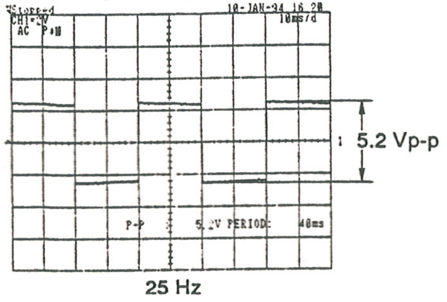
No mark : COMMON (REC)
( ) : PB
* : Impossible to measure the voltage at th

● Signal path

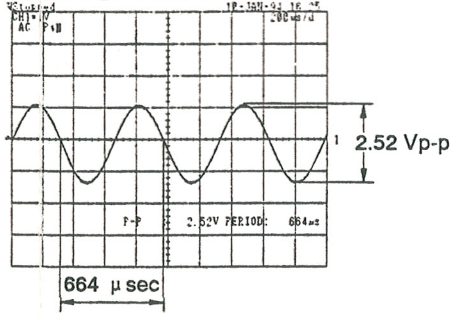
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHR
REC	➡	➡➡	➡
PB	⇨	⇨⇨	⇨

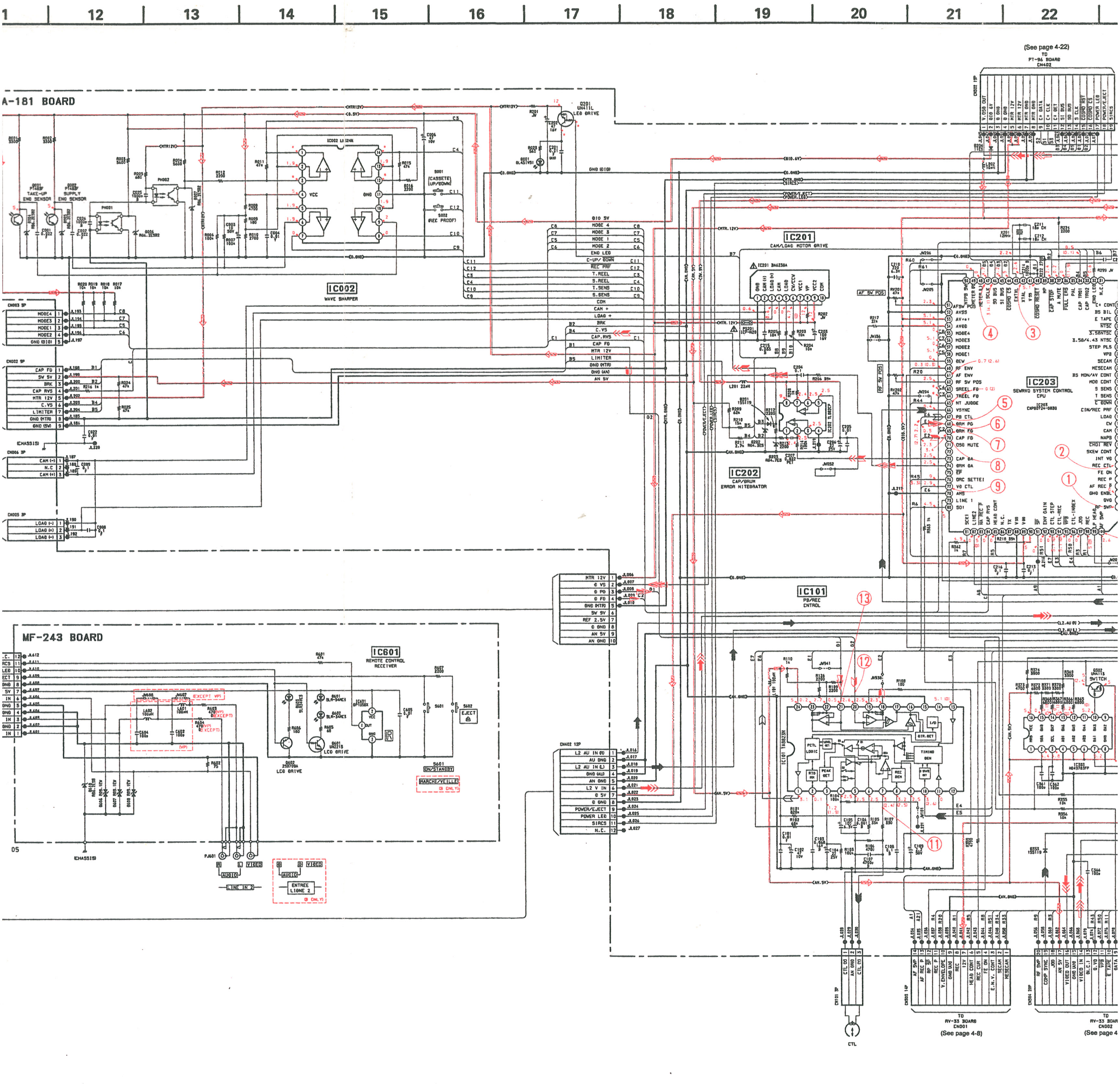


⑩IC203 ⑱ REC/PB



⑫IC101 ⑳ REC/PB

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A-181 BOARD
IC002 WAVE SHAPER
IC201 CAM/LOAD MOTOR DRIVE
IC202 CAP/DRUM ERROR INTEGRATOR
IC203 SERVO/SYSTEM CONTROL CPU
IC101 PB/REC CONTROL
MF-243 BOARD
IC601 REMOTE CONTROL RECEIVER
Q602 LCD DRIVE
Q601 LCD DRIVE
Q201 LED DRIVE
S001 (CASSETTE) UP/DOWN
S002 (REC PROOF)
S601 ON/STANDBY
MARCHE/VEILLE
S602 EJECT
PH001 TAKE-UP END SENSOR
PH002 SUPPLY END SENSOR
CN003 5P
CN002 9P
CN004 3P
CN005 3P
CN401 9P
CN402 12P
LINE IN 2
ENTREE LIGNE 2
(CHASSIS)
CTL
(See page 4-22) TO PT-94 BOARD CN402
TO RV-33 BOARD CN001 (See page 4-8)
TO RV-33 BOARD CN002 (See page 4
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑪
⑫
⑬

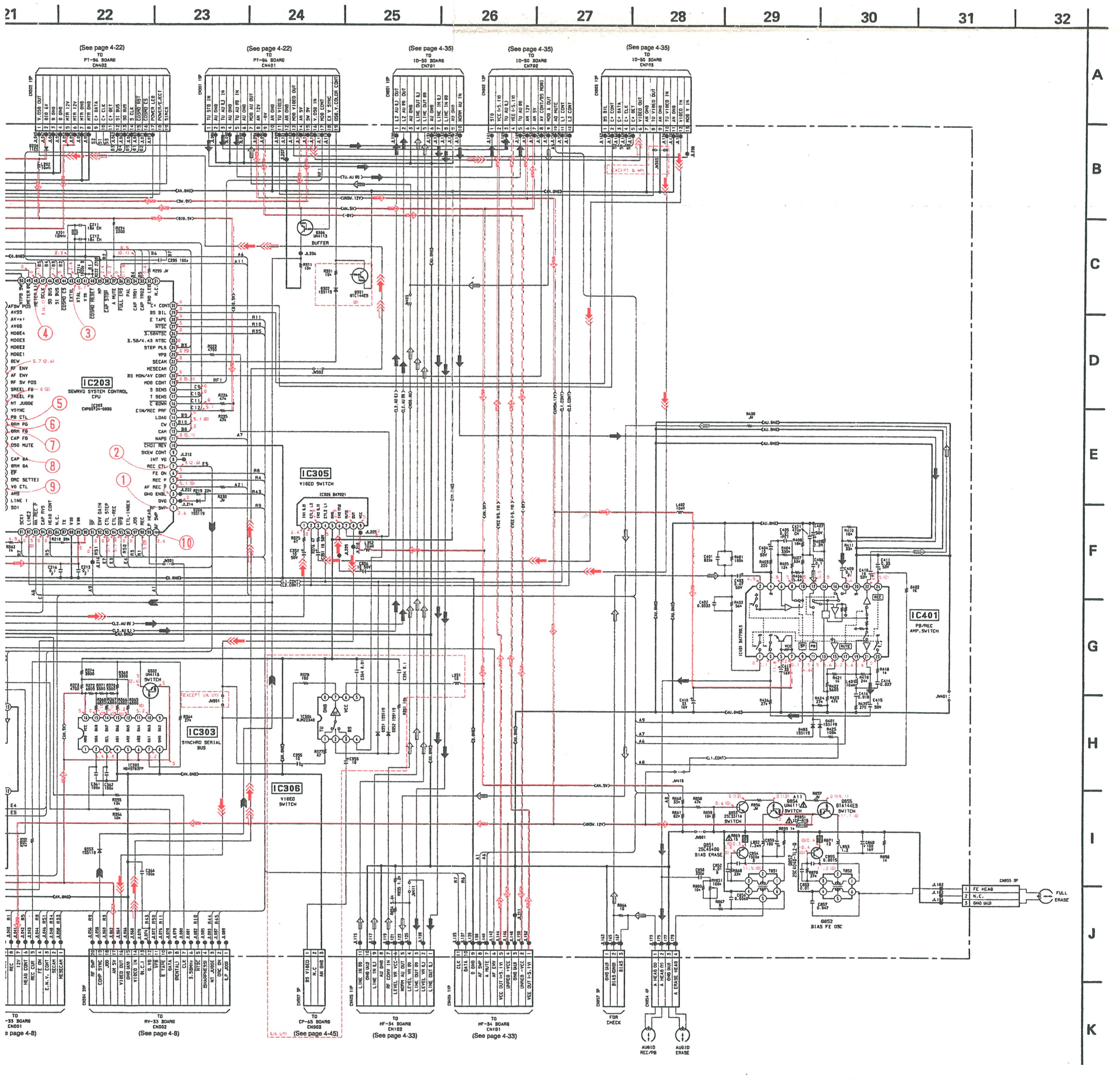
COMMON (REC)
PB
Impossible to measure the voltage at the marked points.

l path

VIDEO SIGNAL			AUDIO SIGNAL
CHROMA	Y	Y/CHROMA	
➡	➡➡	➡➡➡	➡
⇨	⇨⇨	⇨⇨⇨	⇨

- Signal path

	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷▷	
Drum servo (speed and phase)		▷▷▷	
Capstan speed servo		▷	
Capstan phase servo	➡➡	▷▷	▷▷
Capstan servo (speed and phase)		▷▷▷	
Ref. signal	➡		▷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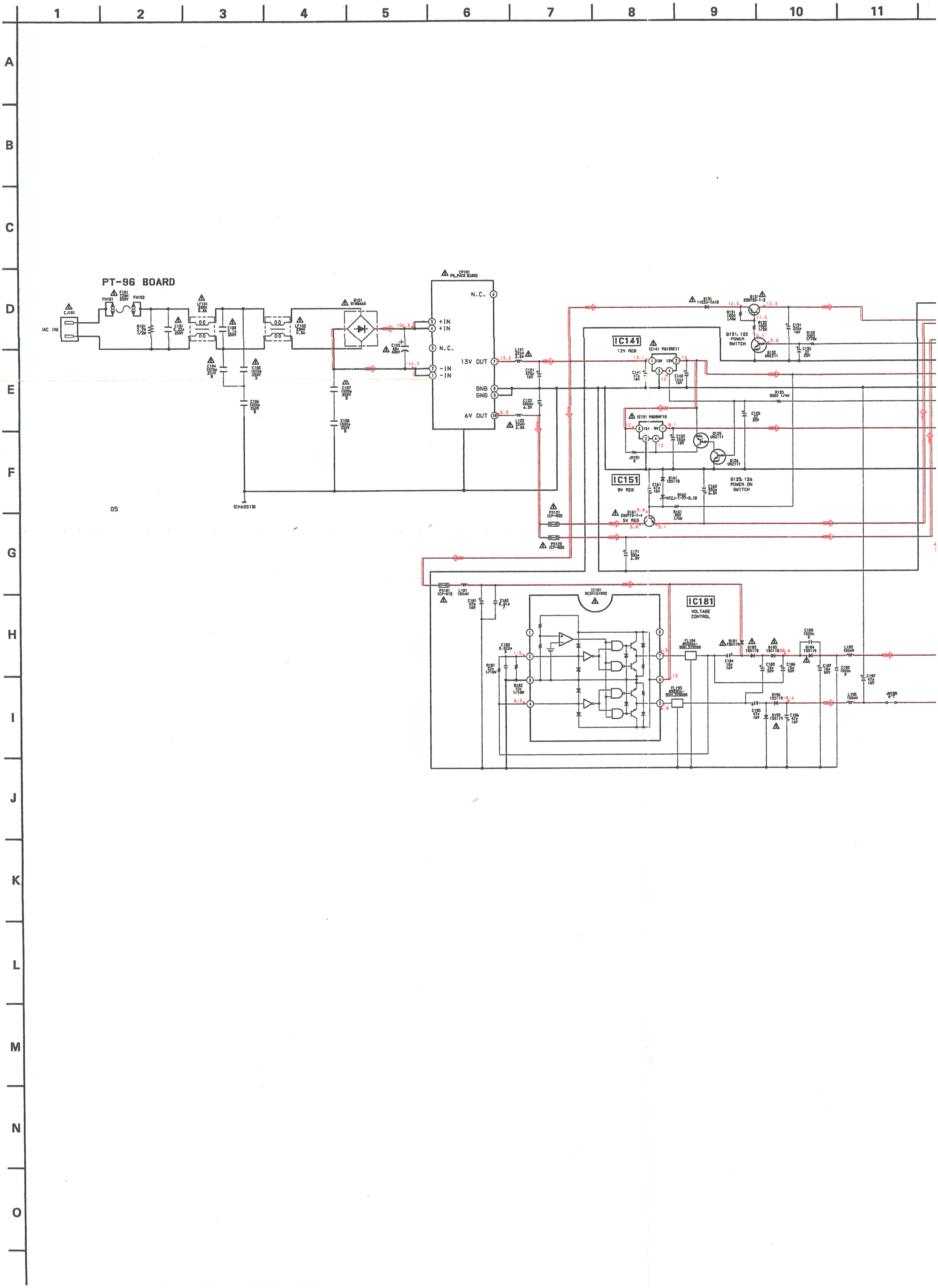
K
(See page 4-22) TO PT-96 BOARD CN402
(See page 4-22) TO PT-96 BOARD CN401
(See page 4-35) TO IO-50 BOARD CN701
(See page 4-35) TO IO-50 BOARD CN702
(See page 4-35) TO IO-50 BOARD CN703
IC203 SERVO SYSTEM CONTROL CPU
IC305 VIDEO SWITCH
IC303 SYNCHRO SERIAL BUS
IC306 VIDEO SWITCH
IC401 PB/REC AMP, SWITCH
Q306 UN4115 BUFFER
Q852 BIAS FE OSC
Q851 2SC4040Q BIAS ERASE
Q853 2SC3311A SWITCH
Q854 UN4111 SWITCH
Q855 DTA144ES SWITCH
CN855 3P
FE HEAD
N.C.
GND (AU)
FULL ERASE
FOR CHECK
AUDIO REC/PB
AUDIO ERASE
TO RY-33 BOARD CN002 (See page 4-8)
TO CP-65 BOARD CN903 (See page 4-45)
TO HF-34 BOARD CN102 (See page 4-33)
TO HF-34 BOARD CN101 (See page 4-33)
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩

SERVO, SYSTEM CONTROL

PT-96 (TUNER, TIMER, MODE CONTROL) SCHEMATIC DIAGRAM

– Ref. No.: PT-96 Board; 3,000 series –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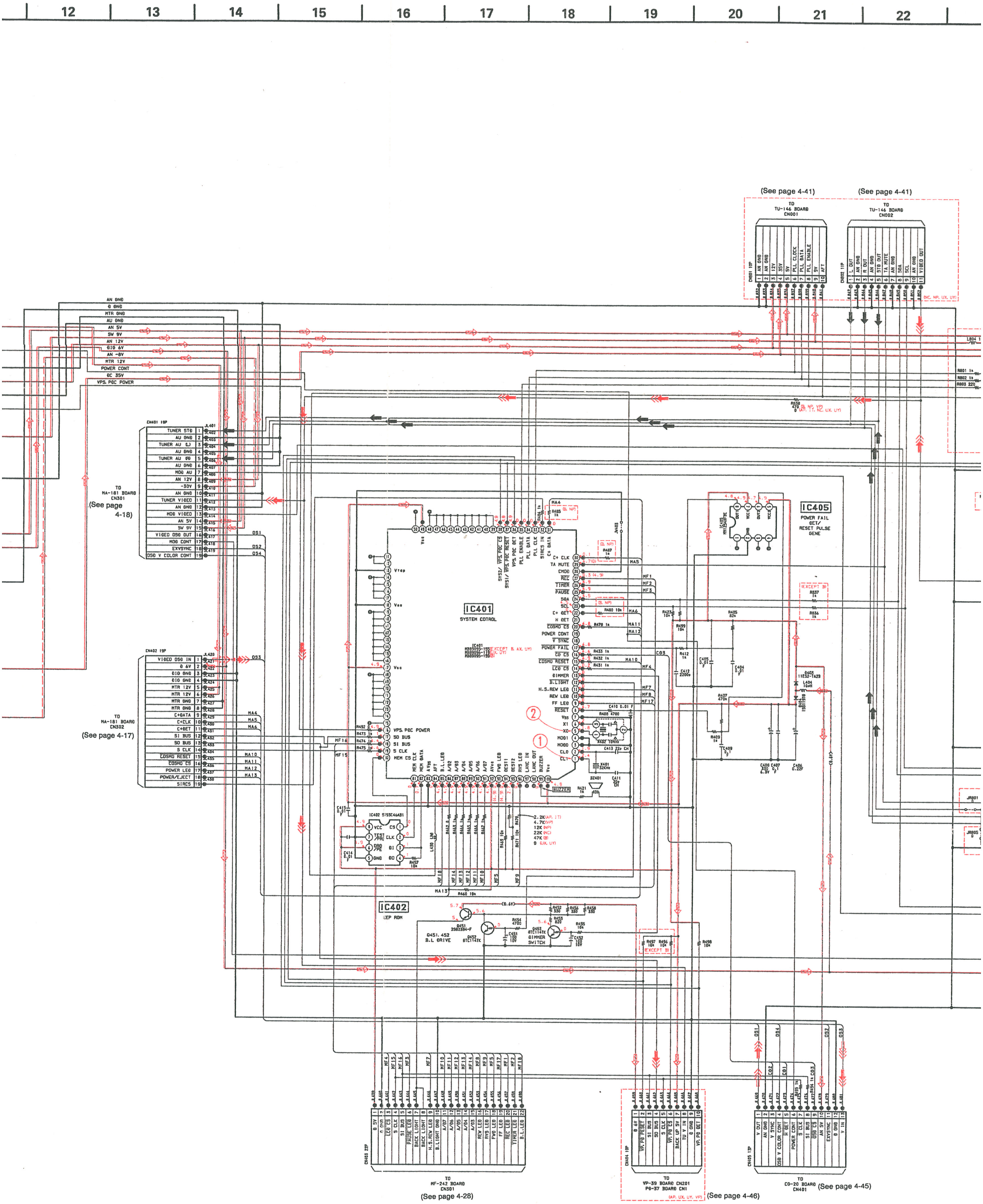
M
N
O
PT-96 BOARD
CJ101
(AC IN)
FH101
F101 T2AH 250V
FH102
R101 2.7M 1/2W
C101 0.22μ 250V
LF101 33MH 0.3A
C102 0.1μ 250V
LF102 33MH 0.3A
C104 1000p 250V B
C105 1000p 250V B
C106 1000p 250V B
D101 S1WBA60
106.3
C103 68μ 400V
-44.3
C107 1000p 250V B
C108 1000p 250V B
05
(CHASSIS)
CP101 PS_PACK (EURO)
N.C. 6
5 +IN
4 +IN
3 N.C.
2 -IN
1 -IN
13V OUT 7
GND 8
GND 9
6V OUT 10
13.2
5.9
L121 22μH 2.0A
C121 470μ 16V
C122 1000μ 6.3V
L122 22μH 2.0A
PS121 ICP-N25
PS123 ICP-N38
D131 11ES2-TA1B
Q131 2SB733-T-3
12.3
12.3
11.5
0.1
3.8
R131 1000 1/4W
R132 1000 1/2W
Q131, 132 POWER SWITCH
Q132 UN2211
C131 220μ 16V
R133 3300 1/10W
C132 22 25V
IC141
12V REG
IC141 PQ12RE11
13.1
12
12
13V
12V
C141 47μ 16V
C142 100μ 16V
R125 3300 1/4W
C125 22 25V
IC151 PQ09NF19
12
9.1
12
12V
9V
C152 100μ 10V
JR151 0
Q125 UN2111
Q126 UN2111
IC151
9V REG
C161 47μ 10V
D161 1SS119
D162 MTZJ-T-77-5.1B
C162 330μ 6.3V
Q125, 126 POWER ON SWITCH
Q161 2SB773-T-4 5V REG
5.9
5.8
5.1
R161 390 1/4W
C171 330μ 6.3V
PS181 ICP-N15
L181 100μH
C181 47μ 16V
C182 0.01μ F
IC181 MC34151DR2
IC181
VOLTAGE CONTROL
C183 0.022μ B
R181 22k 1/10W
R182 10k 1/10W
1.5
6.3
6.3
13
5.8
FL184 855306-550L223550
FL195 855306-550L223550
D181 1SS119
D182 1SS119
D183 1SS119
38.6
D184 1SS119
C189 1000p B
L182 100μH
C184 10μ 16V
C185 10μ 50V
C186 10μ 50V
C187 10μ 50V
C190 1000p B
C197 47μ 16V
D196 1SS119
-9.4
L195 100μH
JW195
C195 47μ 16V
D195 1SS119
C196 47μ 16V

TUNER, MODE CONTROL


12
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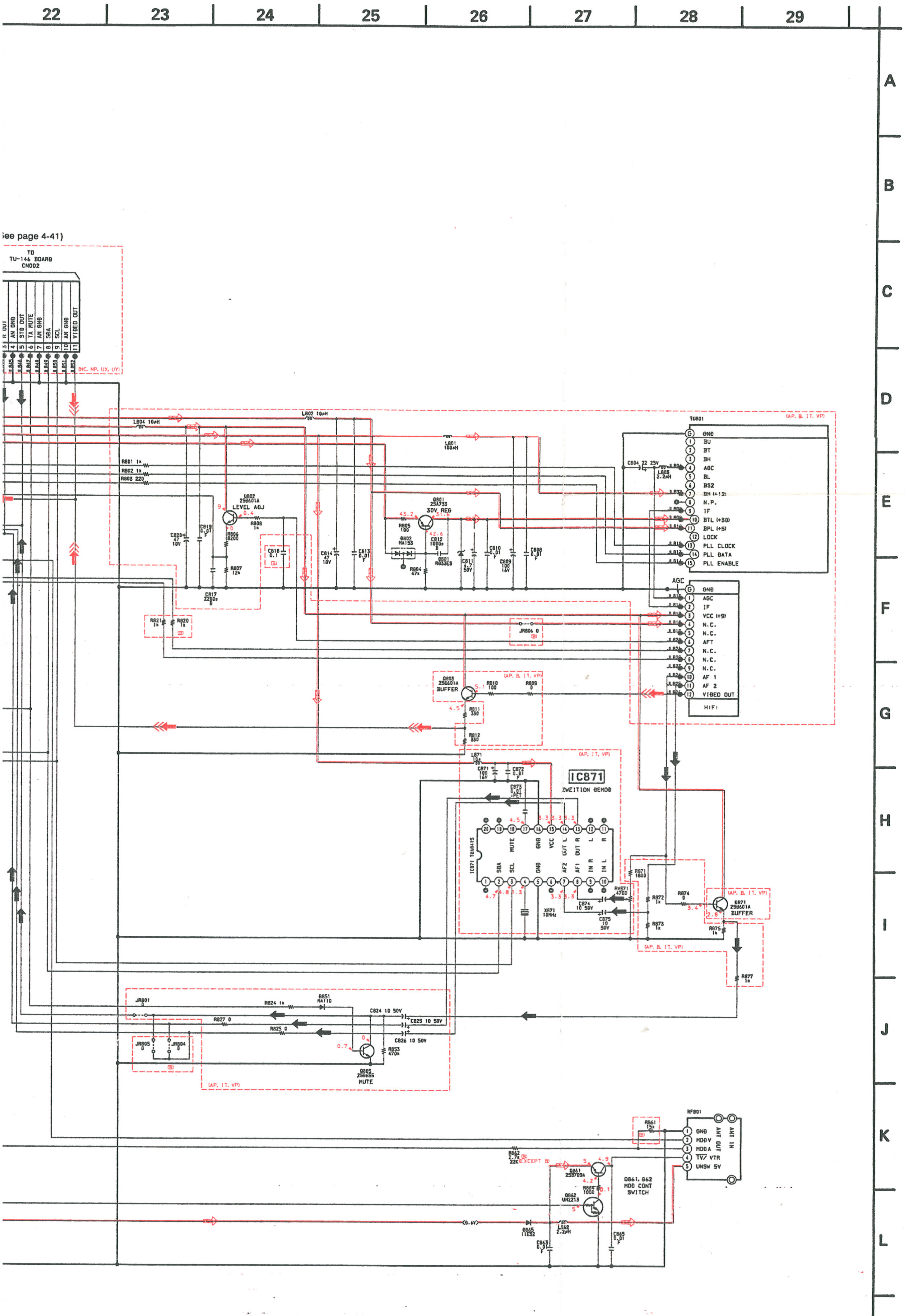
21
22
(See page 4-41)
TO TU-146 BOARD CN001
CN001 10P
AN GND
AN GND
12V
35V
5V
PLL CLOCK
PLL DATA
PLL ENABLE
9V
AFT
(See page 4-41)
TO TU-146 BOARD CN002
CN002 11P
L OUT
AN GND
R OUT
AN GND
STD OUT
TA MUTE
AN GND
SDA
SCL
AN GND
VIDEO OUT
(NC, NP, UX, UY)
AN GND
D GND
MTR GND
AU GND
AN 5V
SW 9V
AN 12V
DIG 6V
AN -8V
MTR 12V
POWER CONT
DC 35V
VPS. PDC POWER
CN401 19P
TUNER STD
AU GND
TUNER AU (L)
AU GND
TUNER AU (R)
AU GND
MOD AU
AN 12V
-30V
AN GND
TUNER VIDEO
AN GND
MOD VIDEO
AN 5V
SW 9V
VIDEO OSD OUT
MOD CONT
EXVSYNC
OSD V COLOR CONT
TO MA-181 BOARD CN301
(See page 4-18)
CN402 19P
VIDEO OSD IN
D 6V
DIG GND
DIG GND
MTR 12V
MTR 12V
MTR GND
MTR GND
C+DATA
C+CLK
C+DET
SI BUS
SO BUS
S CLK
COSMO RESET
COSMO CS
POWER LED
POWER/EJECT
SIRCS
TO MA-181 BOARD CN302
(See page 4-17)
IC401
SYSTEM COTROL
IC401 M38995-155 (EXCEPT B, AX, UY) M38994-116 (B, UY) M38995-159 (AX)
C+ CLK
TA MUTE
CMOD
REC
TIMER
PAUSE
SDA
SCL
C+ DET
H DET
COSMO CS
POWER CONT
V SYNC
POWER FAIL
CO CS
COSMO RESET
LED CS
DIMMER
B.LIGHT
H.S.REW LED
REW LED
FF LED
RESET
Vss
X1
XO
MOD1
MOD0
CLO
CL1
Vss
VPS. PDC POWER
SO BUS
SI BUS
S CLK
MEM CS
MEM CLK
MEM DATA
PLL DATA
PLL CLK
SIRCS IN
C+ DATA
PLL ENABLE
VPS. PDC DET
SYS1/ VPS. PDC RESET
SYS2/ VPS. PDC CS
BUZZER
LANC OUT
LANC IN
RVS LED
REST2
REST1
FWD LED
IC405
POWER FAIL DET/ RESET PULSE GENE
IC405 MM1254XFBE
IC402
EEP ROM
IC402 S-93C46AD1
Q451, 452 B.L DRIVE
Q451 2SB2S94-F
Q452 DTC114TK
Q453 DTC114TK DIMMER SWITCH
X401 32kHz
X402 10MHz
BZ401
D405 1SS133
D402 1SS119
D406 11ES2-TA2B
L404 10uH
(EXCEPT B)
CN403 22P
D 5V
D GND
LED CS
S CLK
SI BUS
PAUSE LED
BACK LIGHT
BACK LIGHT
H.S.REW LED
B.LIGHT GND
A/D7
A/D6
A/D5
A/D4
A/D3
REW LED
RVS LED
FWD LED
FF LED
REC LED
TIMER LED
B.L LED
TO MF-242 BOARD CN501
(See page 4-28)
CN404 10P
VP, PB RESET
D 6V
SI BUS
SO BUS
S CLK
VP, PB CS
BACK UP 5V
TU V IN
D GND
VP, PB DET
TO VP-39 BOARD CN201 PO-37 BOARD CN1
(AP, UX, UY, VP)
(See page 4-46)
CN405 13P
V OUT
AN GND
V SYNC
OSD V COLOR CONT
H DET
POWER CONT
S CLK
SI BUS
OSD CS
AN 5V
EXVSYNC
D GND
V IN
TO CG-20 BOARD CN401
(See page 4-45)


22
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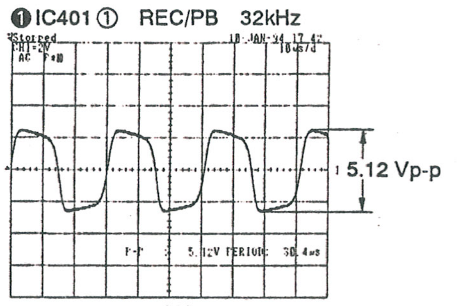
J
K
L
M
N
O
P
ee page 4-41)
TO TU-146 BOARD CN002
TU801
IC871
ZWEITION DEMOD
LEVEL ADJ
30V REG
BUFFER
MUTE
RF801
ANT OUT
ANT IN
Q841, 842 MOD CONT SWITCH
GND
BU
BT
BH
AGC
BL
BS2
N.P.
IF
BTL (+30)
BPL (+5)
LOCK
PLL CLOCK
PLL DATA
PLL ENABLE
VCC (+9)
N.C.
AFT
AF 1
AF 2
VIDEO OUT
HIFI
MOD V
MOD A
TV/ VTR
UNSW 5V
(AP, B, IT, VP)
(NC, NP, UX, UY)

-45)

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

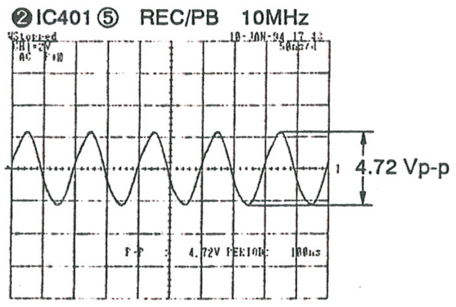
PT-96 BOARD

❶ IC401 ① REC/PB 32kHz



32 kHz

❷ IC401 ⑤ REC/PB 10MHz



10 MHz

No mark : COMMON (REC)
(   ) : PB
* : Impossible to measure the voltage at the marked points.

- Signal path

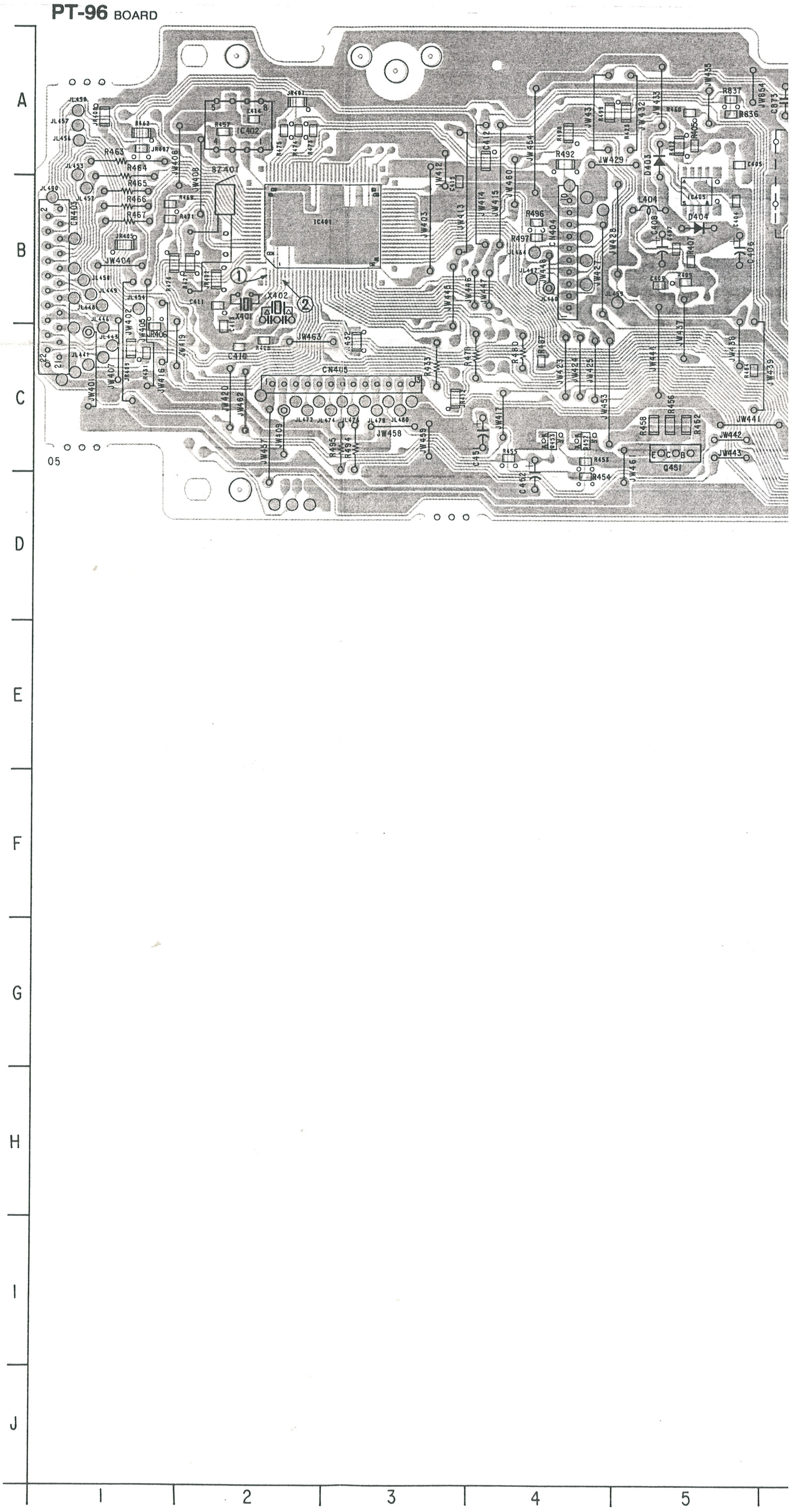
	VIDEO SIGNAL			AUDI
	CHROMA	Y	Y/CHROMA	SIGNA
REC	➡	➡≫	➡⋙	➡
PB	⇨	⇨≫	⇨⋙	⇨

PT-96 (TUNER, TIMER, MODE CONTROL) PRINTED WIRING BOARD

– Ref. No.: PT-96 Board; 3,000 series –

- There is no indication for destination in the printed wiring board diagram.

PT-96 BOARD


A
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1
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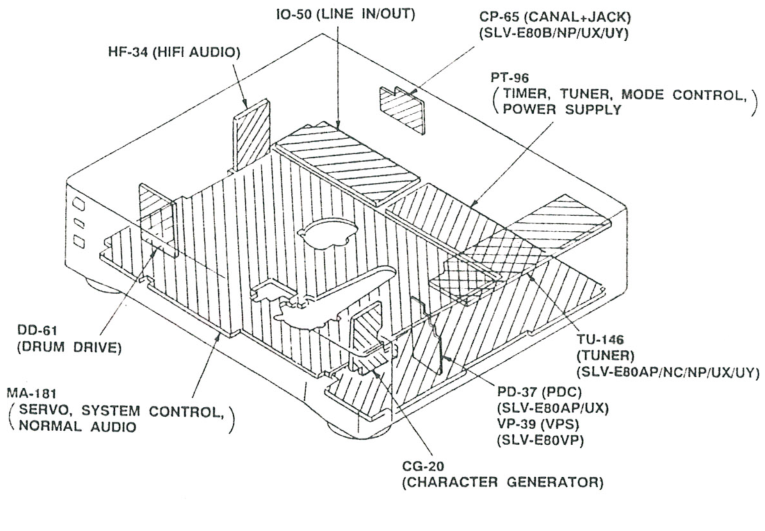
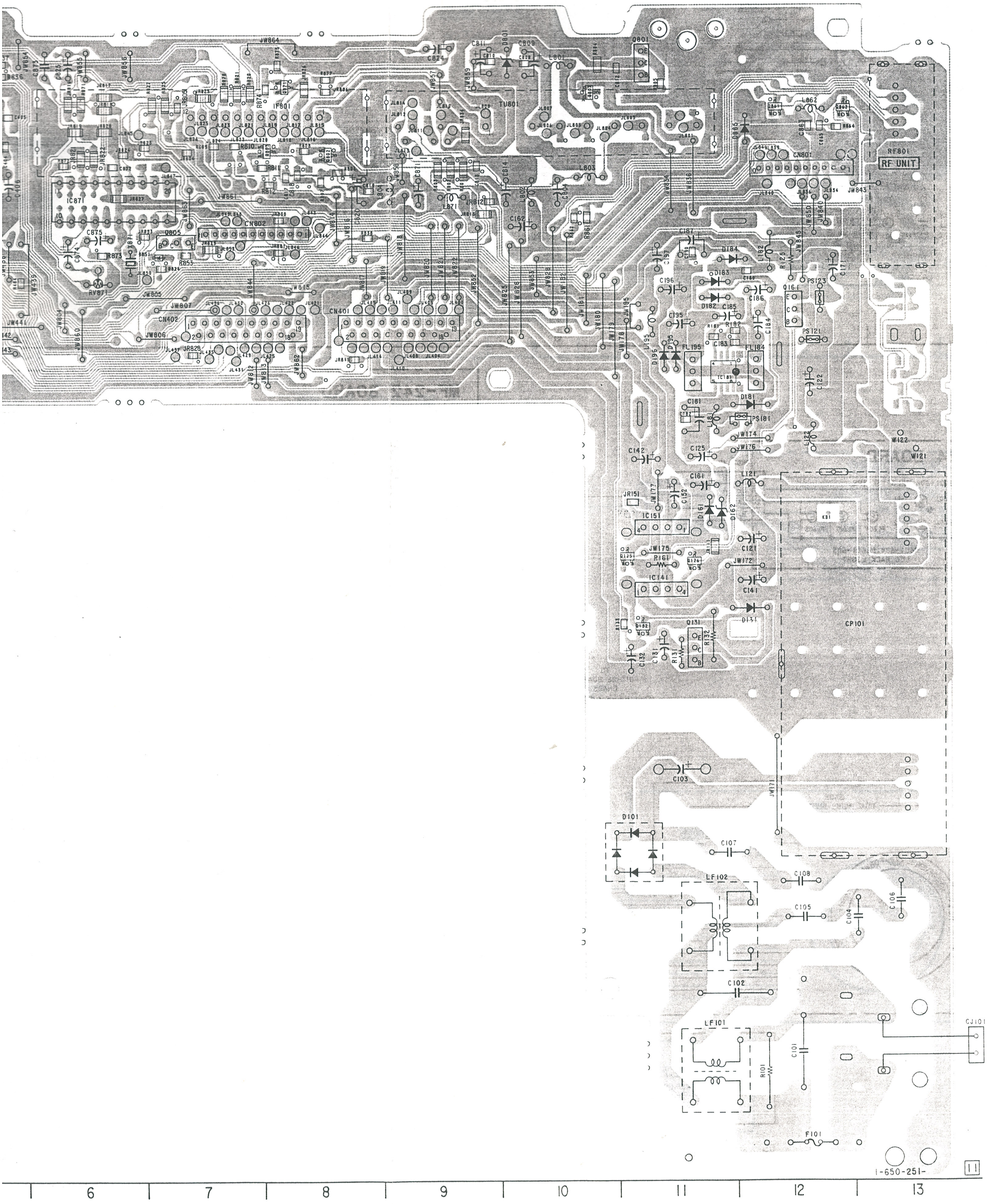
CN401
CN403
IC401
IC402
X402
BZ401
CN405
CN404
Q451
D403
D404
L404
①
②
05

PT-96 BOARD

CN401	C-8
CN402	C-7
CN403	B-1
CN404	B-4
CN405	C-2
CN801	B-12
CN802	B-7
D101	G-11
D131	F-12
D161	E-11
D162	E-11
D181	D-11
D182	C-11
D183	C-11
D184	C-11
D195	C-11
D196	C-11
D403	A-5
D404	B-5
D801	A-10
D802	A-10
D851	C-6
D865	A-12
IC141	E-11
IC151	E-11
IC181	D-11
IC401	B-2
IC402	A-2
IC405	B-5
IC871	B-6
Q125	E-10
Q126	E-11
Q131	F-11
Q132	F-11
Q161	C-12
Q451	C-5
Q452	C-4
Q453	C-4
Q801	A-11
Q802	B-8
Q803	B-8
Q805	B-7
Q861	A-12
Q862	A-12
Q871	A-8


IO-50 (LINE IN/OUT)
CP-65 (CANAL+JACK)
(SLV-E80B/NP/UX/UY)
HF-34 (HIFI AUDIO)
PT-96
(TIMER, TUNER, MODE CONTROL, POWER SUPPLY)
DD-61
(DRUM DRIVE)
TU-146
(TUNER)
(SLV-E80AP/NC/NP/UX/UY)
MA-181
(SERVO, SYSTEM CONTROL, NORMAL AUDIO)
PD-37 (PDC)
(SLV-E80AP/UX)
VP-39 (VPS)
(SLV-E80VP)
CG-20
(CHARACTER GENERATOR)


RF UNIT
RF801
TU801
IF801
IC871
IC151
IC141
IC181
CN801
CN802
CN401
CN402
Q801
Q805
Q131
Q161
D101
D131
D181
D801
LF101
LF102
FL184
FL195
CP101
F101
CJ101
(AC IN)
RV871
1-650-251-
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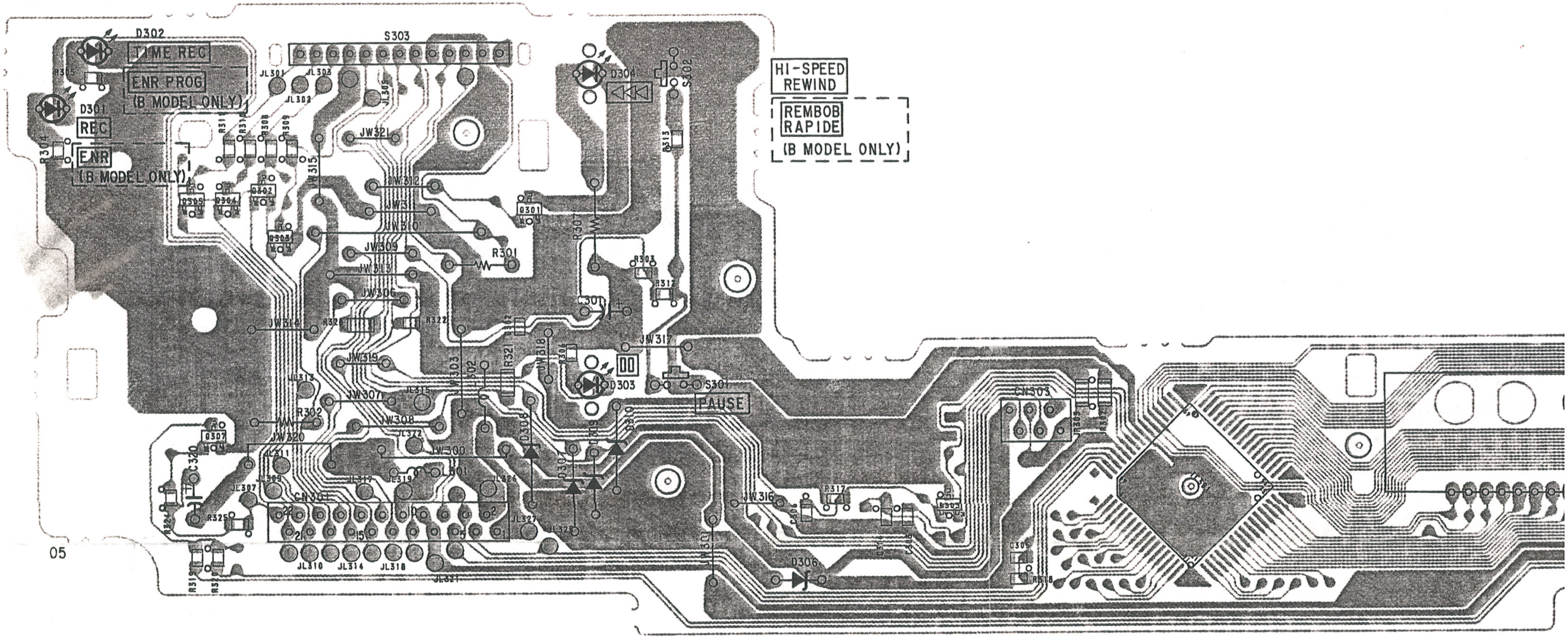
13

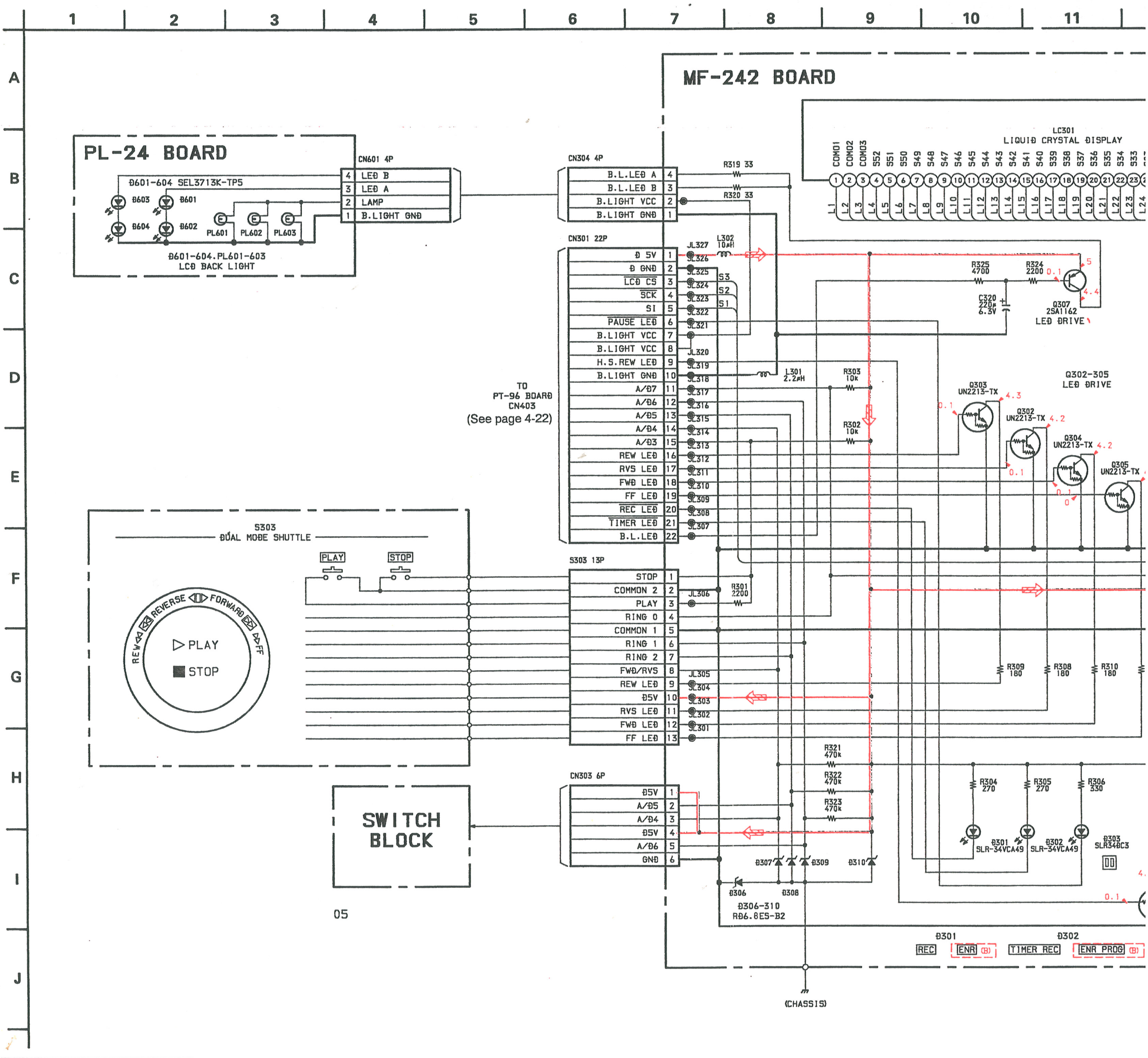
TUNER, MODE CONTRO

MF-242 (LCD DRIVE), PL-24 (LAMP) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

– Ref. No.: MF-242 and PL-24 Boards; 5,000 series –

MF-242 BOARD


D302
TIME REC
ENR PROG
(B MODEL ONLY)
D301
REC
ENR
(B MODEL ONLY)
S303
D304
S302
HI-SPEED
REWIND
REMBOB
RAPIDE
(B MODEL ONLY)
D303
S301
PAUSE
CN303
CN301
R301
R302
C320
D306
05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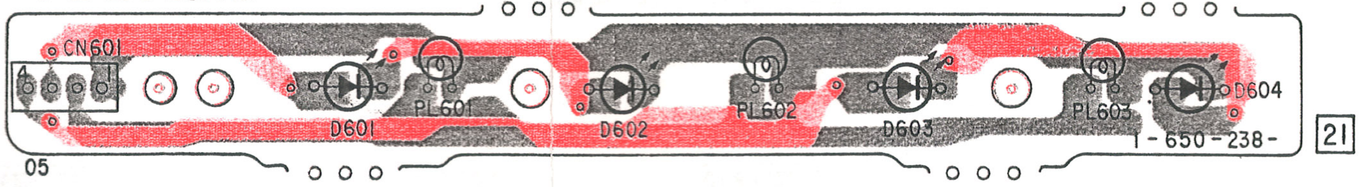
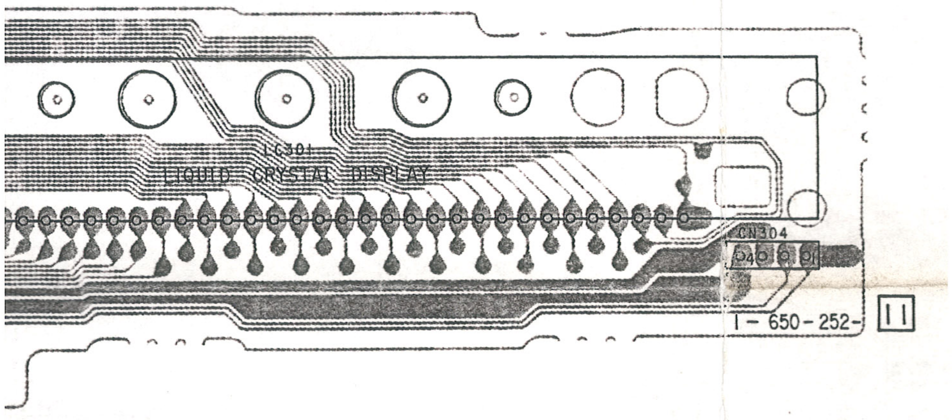
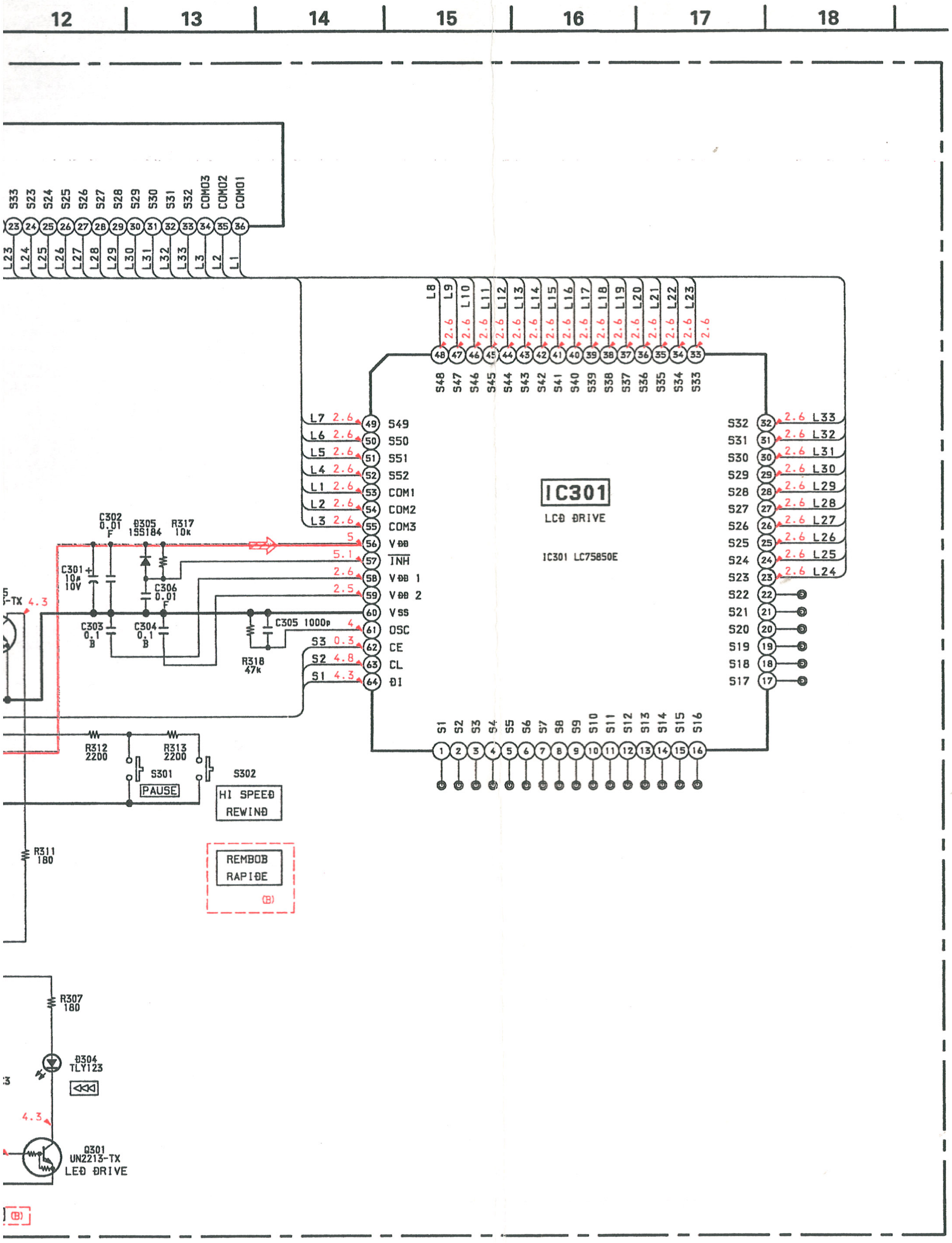
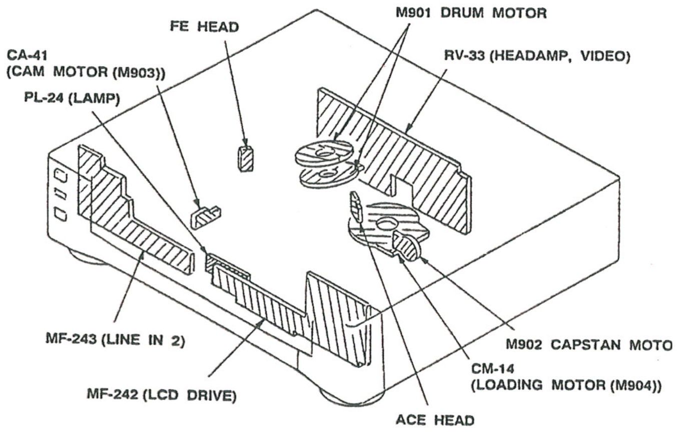
MF-242 BOARD
PL-24 BOARD
D601-604 SEL3713K-TP5
D603
D601
D604
D602
PL601
PL602
PL603
D601-604.PL601-603
LCD BACK LIGHT
CN601 4P
4 LED B
3 LED A
2 LAMP
1 B.LIGHT GND
CN304 4P
B.L.LED A 4
B.L.LED B 3
B.LIGHT VCC 2
B.LIGHT GND 1
R319 33
R320 33
LC301
LIQUID CRYSTAL DISPLAY
CN301 22P
D 5V 1
D GND 2
LCD CS 3
SCK 4
SI 5
PAUSE LED 6
B.LIGHT VCC 7
B.LIGHT VCC 8
H.S.REW LED 9
B.LIGHT GND 10
A/D7 11
A/D6 12
A/D5 13
A/D4 14
A/D3 15
REW LED 16
RVS LED 17
FWD LED 18
FF LED 19
REC LED 20
TIMER LED 21
B.L.LED 22
L302 10μH
L301 2.2μH
R325 4700
R324 2200
C320 220μ 6.3V
Q307 2SA1162
LED DRIVE
R303 10k
R302 10k
Q302-305
LED DRIVE
Q303 UN2213-TX
Q302 UN2213-TX
Q304 UN2213-TX
Q305 UN2213-TX
TO
PT-96 BOARD
CN403
(See page 4-22)
S303
DUAL MODE SHUTTLE
PLAY
STOP
REVERSE
FORWARD
REW
FF
PLAY
STOP
S303 13P
STOP 1
COMMON 2 2
PLAY 3
RING 0 4
COMMON 1 5
RING 1 6
RING 2 7
FWD/RVS 8
REW LED 9
D5V 10
RVS LED 11
FWD LED 12
FF LED 13
R301 2200
R309 180
R308 180
R310 180
R321 470k
R322 470k
R323 470k
R304 270
R305 270
R306 330
CN303 6P
D5V 1
A/D5 2
A/D4 3
D5V 4
A/D6 5
GND 6
SWITCH
BLOCK
D307
D309
D310
D306
D308
D306-310
RD6.8ES-B2
D301 SLR-34VCA49
D302 SLR-34VCA49
D303 SLR34DC3
(CHASSIS)
D301
REC
ENR (B)
D302
TIMER REC
ENR PROG (B)
05

PL-24 BOARD


CN601
D601
PL601
D602
PL602
D603
PL603
D604
1-650-238-
21
05


IC301
LIQUID CRYSTAL DISPLAY
CN304
1-650-252-
11

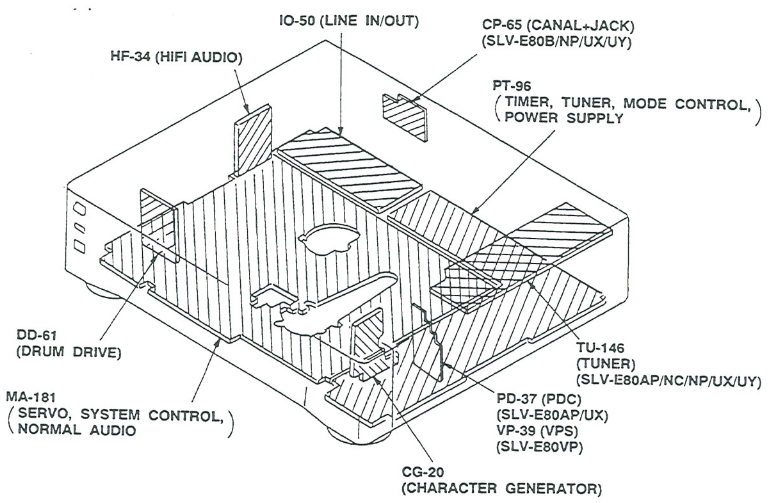

12
13
14
15
16
17
18
IC301
LCD DRIVE
IC301 LC75850E
VDD
INH
VDD 1
VDD 2
VSS
OSC
CE
CL
DI
COM1
COM2
COM3
C302 0.01 F
D305 1SS184
R317 10k
C301 10μ 10V
C306 0.01
C303 0.1 B
C304 0.1 B
C305 1000p
R318 47k
R312 2200
R313 2200
S301 PAUSE
S302 HI SPEED REWIND
REMBOB RAPIDE
(B)
R311 180
R307 180
D304 TLY123
Q301 UN2213-TX LED DRIVE


FE HEAD
M901 DRUM MOTOR
CA-41 (CAM MOTOR (M903))
RV-33 (HEADAMP, VIDEO)
PL-24 (LAMP)
MF-243 (LINE IN 2)
M902 CAPSTAN MOTOR
CM-14 (LOADING MOTOR (M904))
MF-242 (LCD DRIVE)
ACE HEAD

No mark : COMMON (REC)
( ) : PB

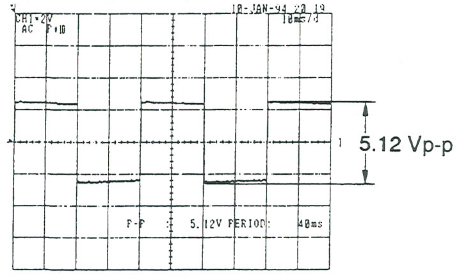
HF-34 (HiFi AUDIO) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

– Ref. No.: HF-34 Board; 6,000 series –


IO-50 (LINE IN/OUT)
CP-65 (CANAL+JACK) (SLV-E80B/NP/UX/UY)
HF-34 (HIFI AUDIO)
PT-96 (TIMER, TUNER, MODE CONTROL, POWER SUPPLY)
DD-61 (DRUM DRIVE)
MA-181 (SERVO, SYSTEM CONTROL, NORMAL AUDIO)
TU-146 (TUNER) (SLV-E80AP/NC/NP/UX/UY)
PD-37 (PDC) (SLV-E80AP/UX)
VP-39 (VPS) (SLV-E80VP)
CG-20 (CHARACTER GENERATOR)

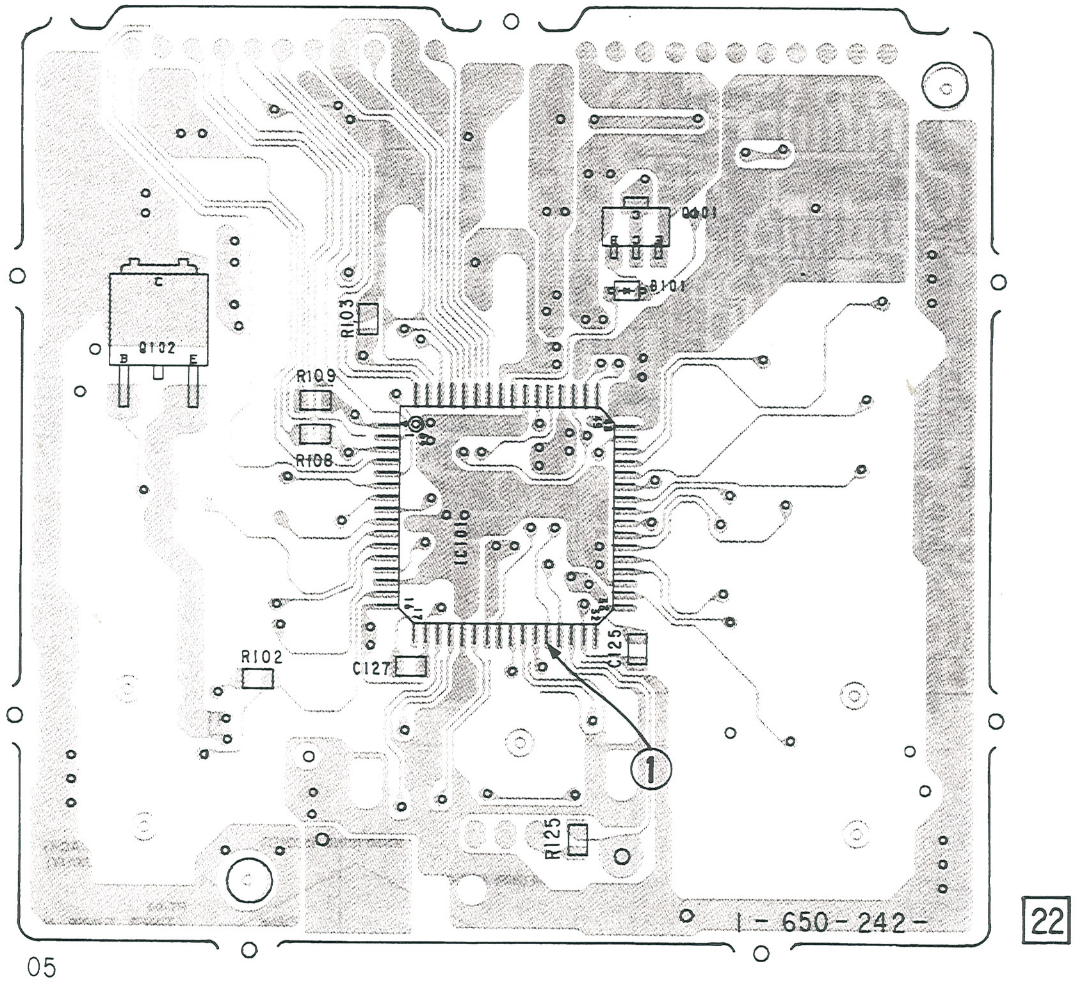
HF-34 BOARD

① IC101 ㉘ REC/PB

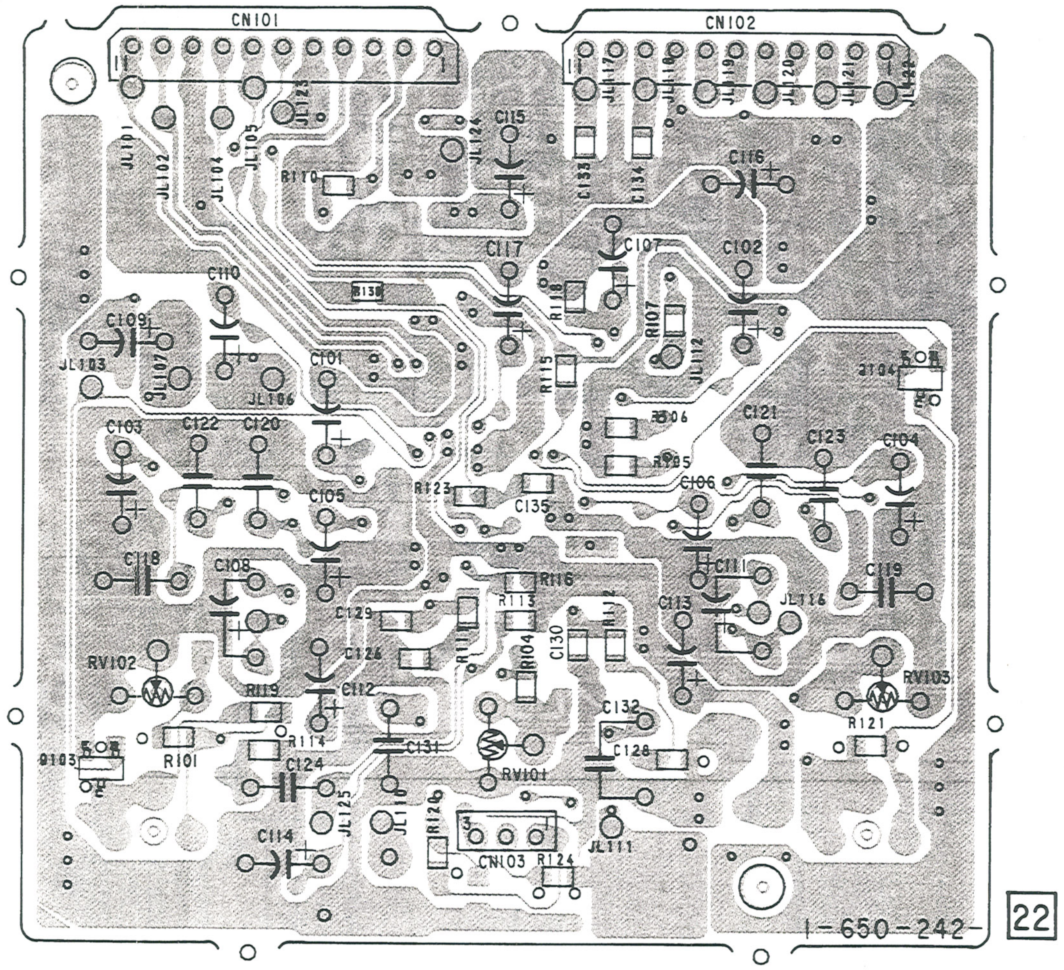


25 Hz

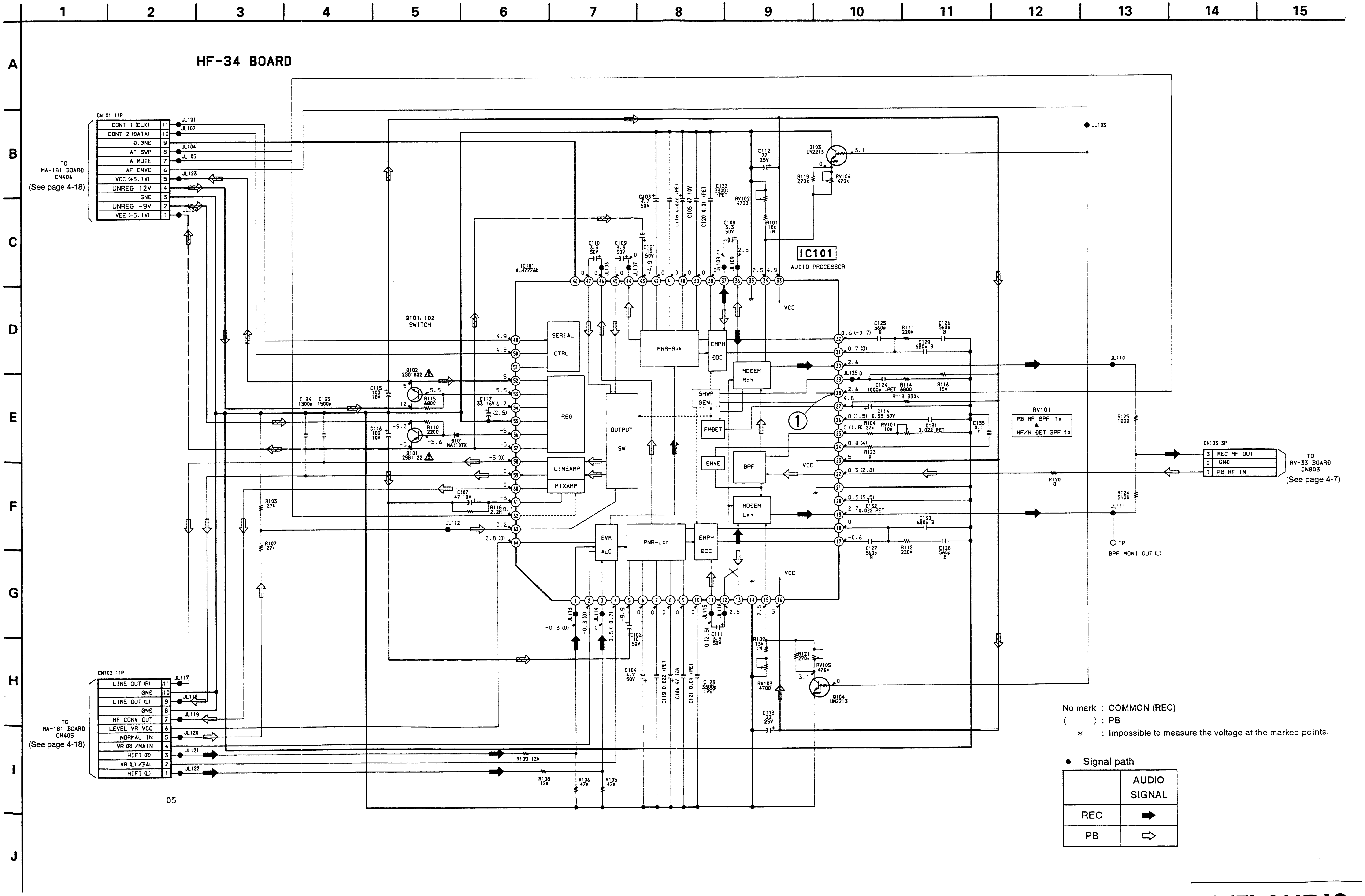
HF-34 BOARD (COMPONENT SIDE)


Q101
Q102
R101
R102
R103
R108
R109
R125
C125
C127
IC101
①
1-650-242-
22
05

HF-34 BOARD (CONDUCTOR SIDE)


CN101
CN102
CN103
C101
C102
C103
C104
C105
C106
C107
C108
C109
C110
C111
C112
C113
C114
C115
C116
C117
C118
C119
C120
C121
C122
C123
C124
C126
C128
C129
C130
C131
C132
C133
C134
C135
R101
R104
R105
R106
R107
R110
R111
R113
R114
R115
R116
R118
R119
R121
R123
R124
R126
R130
RV101
RV102
RV103
Q103
Q104
JL101
JL102
JL103
JL104
JL105
JL106
JL107
JL111
JL112
JL116
JL117
JL118
JL119
JL120
JL121
JL122
JL123
JL124
JL125
1-650-242-
22

HF-34 BOARD


1
2
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4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
CN101 11P
CONT 1 (CLK) 11
CONT 2 (DATA) 10
D.GND 9
AF SWP 8
A MUTE 7
AF ENVE 6
VCC (+5.1V) 5
UNREG 12V 4
GND 3
UNREG -9V 2
VEE (-5.1V) 1
JL101
JL102
JL104
JL105
JL123
JL124
TO
MA-181 BOARD
CN406
(See page 4-18)
IC101
XLH7776K
IC101
AUDIO PROCESSOR
Q101, 102
SWITCH
Q102
2SD1802
Q101
2SB1122
Q103
UN2213
Q104
UN2213
D101
MA110TX
SERIAL
CTRL
REG
OUTPUT
SW
LINEAMP
MIXAMP
PNR-Rch
PNR-Lch
EMPH
DOC
MODEM
Rch
MODEM
Lch
SHWP
GEN.
FMDET
ENVE
BPF
EVR
ALC
VCC
RV101
PB RF BPF fo
&
HF/N DET BPF fo
RV102
4700
RV103
4700
RV104
470k
RV105
470k
R101
10k
R102
13k
R103
27k
R107
27k
R104
22k
R105
47k
R106
47k
R108
12k
R109 12k
R110
2200
R111
220k
R112
220k
R113 330k
R114
6800
R115
6800
R116
15k
R118
2.2M
R119
270k
R120
0
R121
270k
R123
0
R124
5100
R125
1000
C102
10
50V
C103
2.7
50V
C104
4.7
50V
C105 47 10V
C106 47 10V
C107
47 10V
C108
3.3
50V
C109
3.3
50V
C110
3.3
50V
C111
3.3
50V
C112
22
25V
C113
22
25V
C114
0.33 50V
C115
100
10V
C116
100
10V
C117
33 16V
C118 0.022 :PET
C119 0.022 :PET
C120 0.01 :PET
C121 0.01 :PET
C122
3300p
:PET
C123
3300p
:PET
C124
1000p :PET
C125
560p
B
C126
560p
B
C127
560p
B
C128
560p
B
C129
680p B
C130
680p B
C131
0.022 PET
C132
0.022 PET
C133
1500p
C134
1500p
C135
0.1
F
JL103
JL106
JL107
JL108
JL109
JL110
JL111
JL112
JL113
JL114
JL115
JL116
JL125
①
CN103 3P
3 REC RF OUT
2 GND
1 PB RF IN
TO
RV-33 BOARD
CN803
(See page 4-7)
TP
BPF MONI OUT (L)
CN102 11P
LINE OUT (R) 11
GND 10
LINE OUT (L) 9
GND 8
RF CONV OUT 7
LEVEL VR VCC 6
NORMAL IN 5
VR (R) /MAIN 4
HIFI (R) 3
VR (L) /BAL 2
HIFI (L) 1
JL117
JL118
JL119
JL120
JL121
JL122
TO
MA-181 BOARD
CN405
(See page 4-18)
05

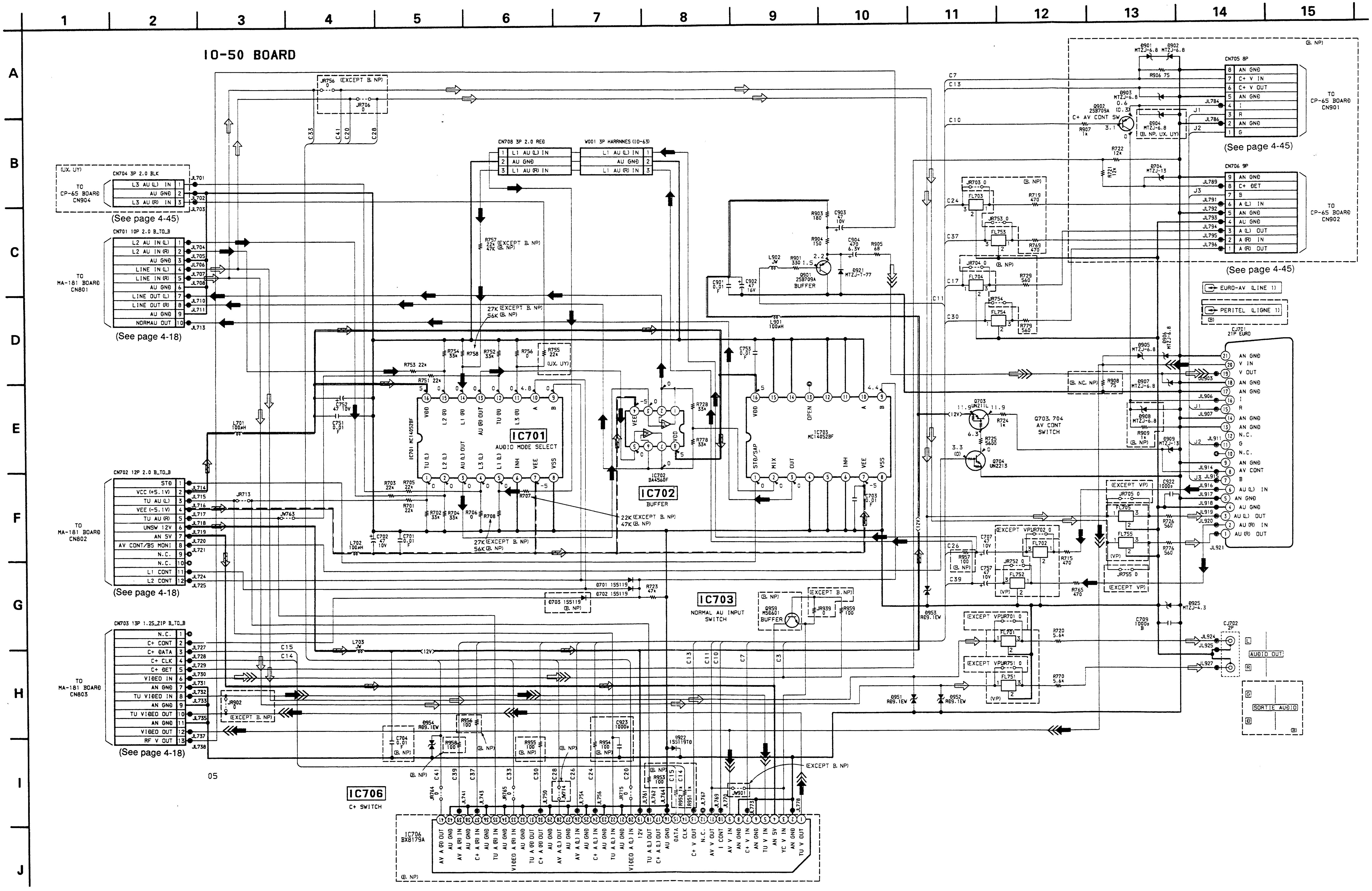
No mark : COMMON (REC)
( ) : PB
* : Impossible to measure the voltage at the marked points.

- Signal path

	AUDIO SIGNAL
REC	➡
PB	⇨

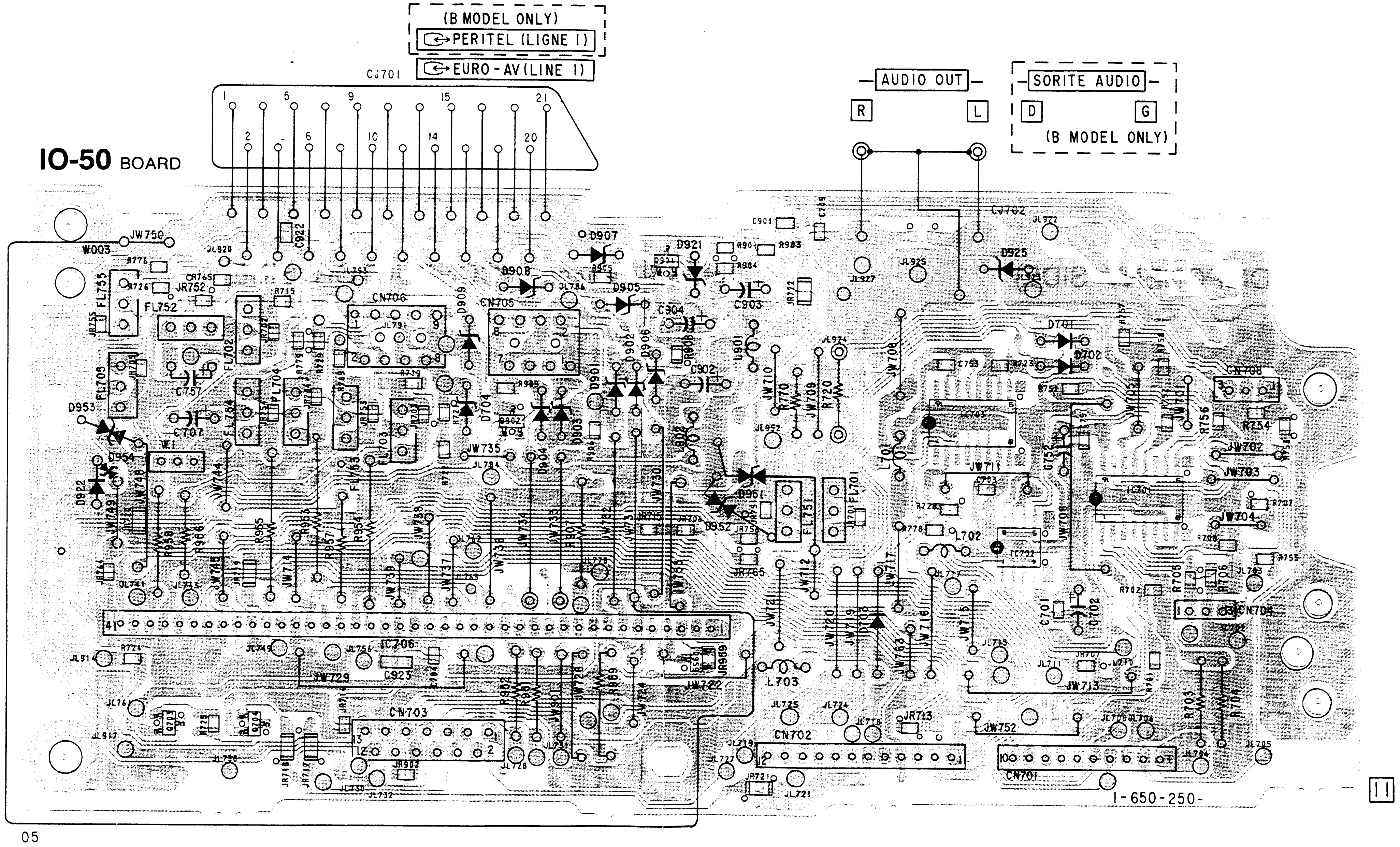
IO-50 (LINE IN/OUT) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

– Ref. No.: IO-50 Board; 4,000 series –


IO-50 BOARD
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
TO CP-65 BOARD CN904
(See page 4-45)
TO MA-181 BOARD CN801
(See page 4-18)
TO MA-181 BOARD CN802
(See page 4-18)
TO MA-181 BOARD CN803
(See page 4-18)
TO CP-65 BOARD CN901
(See page 4-45)
TO CP-65 BOARD CN902
(See page 4-45)
IC701 AUDIO MODE SELECT
IC702 BUFFER
IC703 NORMAL AU INPUT SWITCH
IC706 C+ SWITCH
Q901 BUFFER
Q703, 704 AV CONT SWITCH
Q959 BUFFER
EURO-AV (LINE 1)
PERITEL (LIGNE 1)
CJ701 21P EURO
CJ702 2P
AUDIO OUT
SORTIE AUDIO

- There is no indication for destination in the printed wiring board diagram.

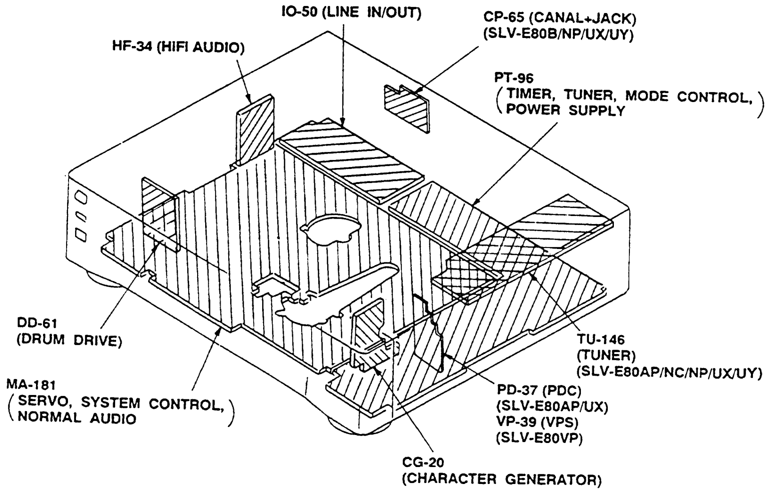
IO-50 BOARD


(B MODEL ONLY)
PERITEL (LIGNE 1)
EURO-AV (LINE 1)
CJ701
1
5
9
15
21
2
6
10
14
20
AUDIO OUT
R
L
SORITE AUDIO
D
G
(B MODEL ONLY)
CJ702
CN706
CN705
CN708
CN704
CN703
CN702
CN701
IC706
IC701
IC702
1-650-250-
11
05

No mark : COMMON (REC)
( ) : PB

- Signal path

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡>	➡>>	➡
PB	⇨	⇨>	⇨>>	⇨

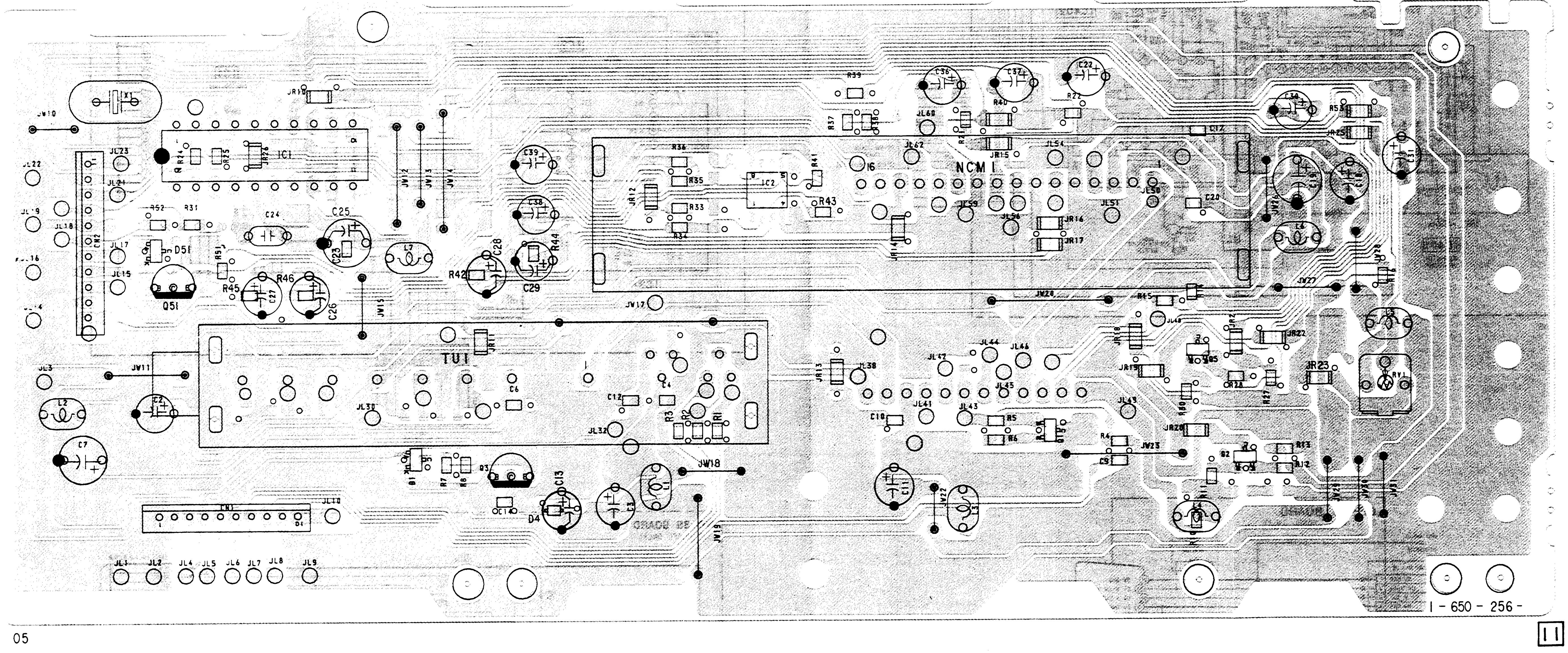

IO-50 (LINE IN/OUT)
HF-34 (HIFI AUDIO)
CP-65 (CANAL+JACK) (SLV-E80B/NP/UX/UY)
PT-96 (TIMER, TUNER, MODE CONTROL, POWER SUPPLY)
DD-61 (DRUM DRIVE)
MA-181 (SERVO, SYSTEM CONTROL, NORMAL AUDIO)
TU-146 (TUNER) (SLV-E80AP/NC/NP/UX/UY)
PD-37 (PDC) (SLV-E80AP/UX)
VP-39 (VPS) (SLV-E80VP)
CG-20 (CHARACTER GENERATOR)

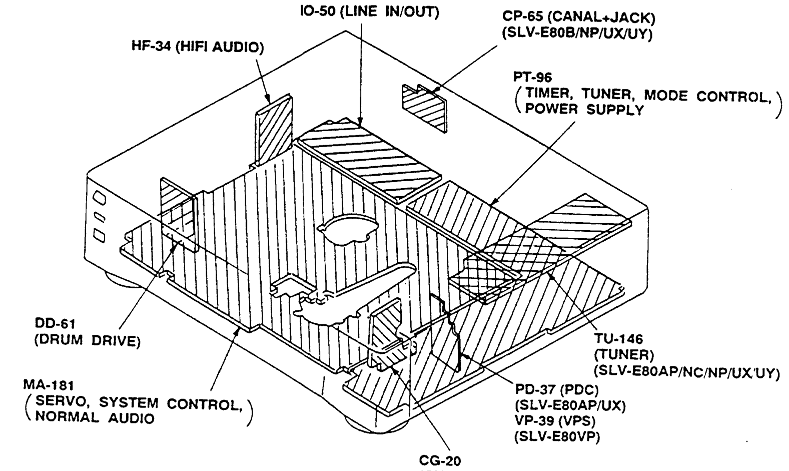
TU-146 (TUNER) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

– Ref. No.: TU-146 Board; 7,000 series –

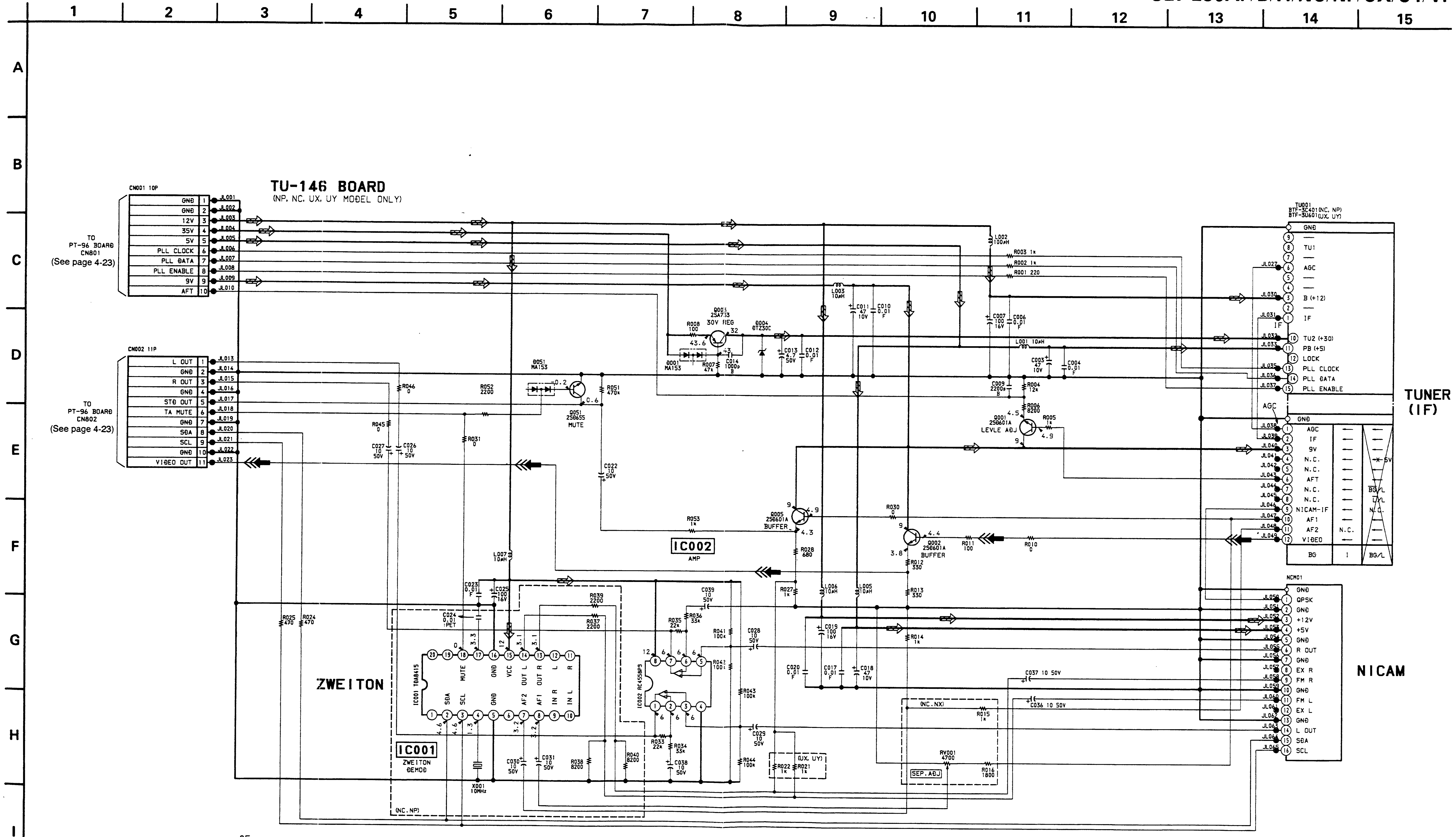
(NC,NP,UX,UY MODEL ONLY)

TU-146 BOARD


X1
IC1
TU1
NCM1
IC2
Q51
D51
CN1
CN2
C25
C28
C29
C39
R42
R43
R44
R45
R46
JR23
RV1
JW18
JW11
1 - 650 - 256 -
05
11


IO-50 (LINE IN/OUT)
CP-65 (CANAL+JACK) (SLV-E80B/NP/UX/UY)
HF-34 (HIFI AUDIO)
PT-96 (TIMER, TUNER, MODE CONTROL, POWER SUPPLY)
DD-61 (DRUM DRIVE)
MA-181 (SERVO, SYSTEM CONTROL, NORMAL AUDIO)
TU-146 (TUNER) (SLV-E80AP/NC/NP/UX/UY)
PD-37 (PDC) (SLV-E80AP/UX)
VP-39 (VPS) (SLV-E80VP)
CG-20 (CHARACTER GENERATOR)

- There is no indication for destination in the printed wiring board diagram.


1
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11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
TU-146 BOARD
(NP, NC, UX, UY MODEL ONLY)
CN001 10P
GND
GND
12V
35V
5V
PLL CLOCK
PLL DATA
PLL ENABLE
9V
AFT
TO PT-96 BOARD CN801 (See page 4-23)
CN002 11P
L OUT
GND
R OUT
GND
STD OUT
TA MUTE
GND
SDA
SCL
GND
VIDEO OUT
TO PT-96 BOARD CN802 (See page 4-23)
Q003 2SA733 30V REG
D004 DTZ30C
D001 MA153
D051 MA153
Q051 2SD655 MUTE
Q005 2SD601A BUFFER
Q002 2SD601A BUFFER
Q001 2SD601A LEVLE ADJ
IC002 AMP
IC001 ZWEITON DEMOD
ZWEITON
IC001 TDA8415
IC002 RC4558P3
X001 10MHz
(NC, NP)
(NC, NX)
(UX, UY)
SEP. ADJ
RV001 4700
TU001 BTF-3C401(NC, NP) BTF-3U601(UX, UY)
GND
TU1
AGC
B (+12)
IF
TU2 (+30)
PB (+5)
LOCK
PLL CLOCK
PLL DATA
PLL ENABLE
TUNER (IF)
AGC
IF
9V
N.C.
N.C.
AFT
N.C.
N.C.
NICAM-IF
AF1
AF2
VIDEO
BG
I
BG/L
NCM01
GND
QPSK
GND
+12V
+5V
GND
R OUT
GND
EX R
FM R
GND
FM L
EX L
GND
L OUT
SDA
SCL
NICAM
05

- Signal path

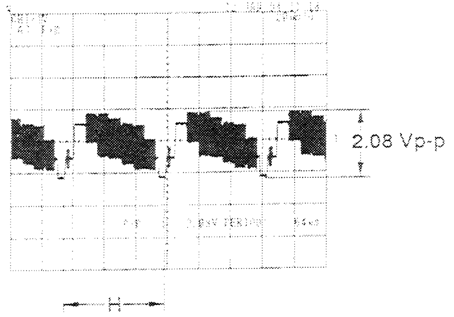
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	⇛	⇛⇛

CG-20 (CHARACTER GENERATOR), CP-65 (CANAL + JACK), PD-37 (PDC), VP-39 (VPS) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

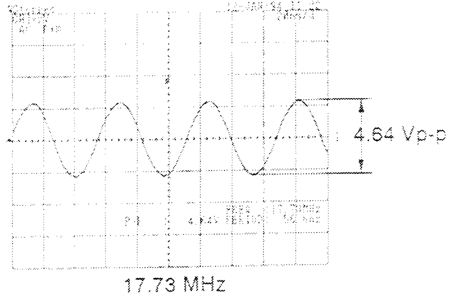
– Ref. No.: CG-20 Board; 4,000 series, CP-65, PD-37 and VP-39 Boards; 9,000 series –

CG-20 BOARD

❶ IC401 ③, ㉕ REC/PB

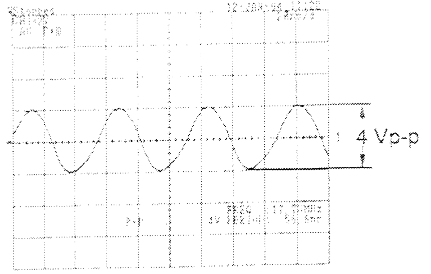


❷ IC401 ⑧ REC/PB



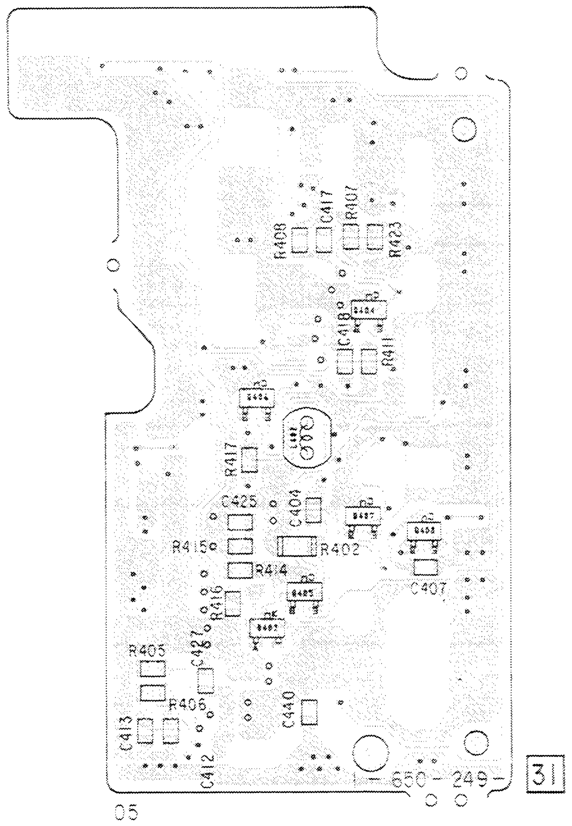
17.73 MHz

❸ IC401 ⑨ REC/PB

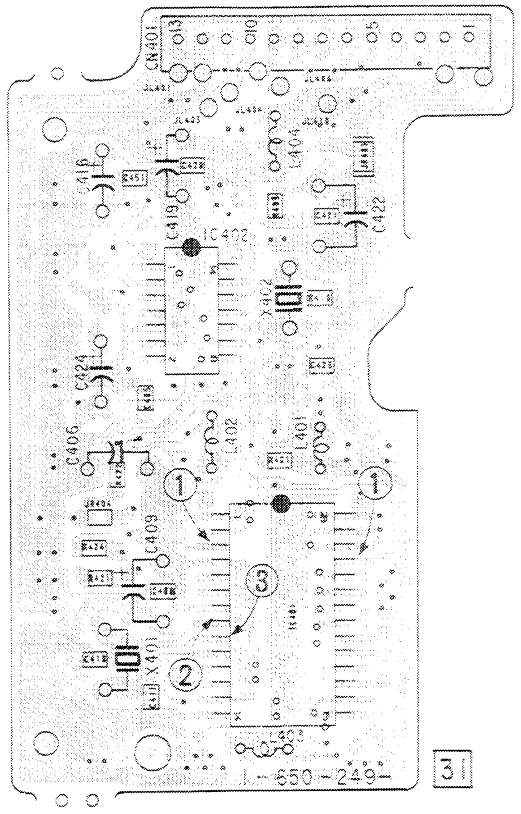


17.73 MHz

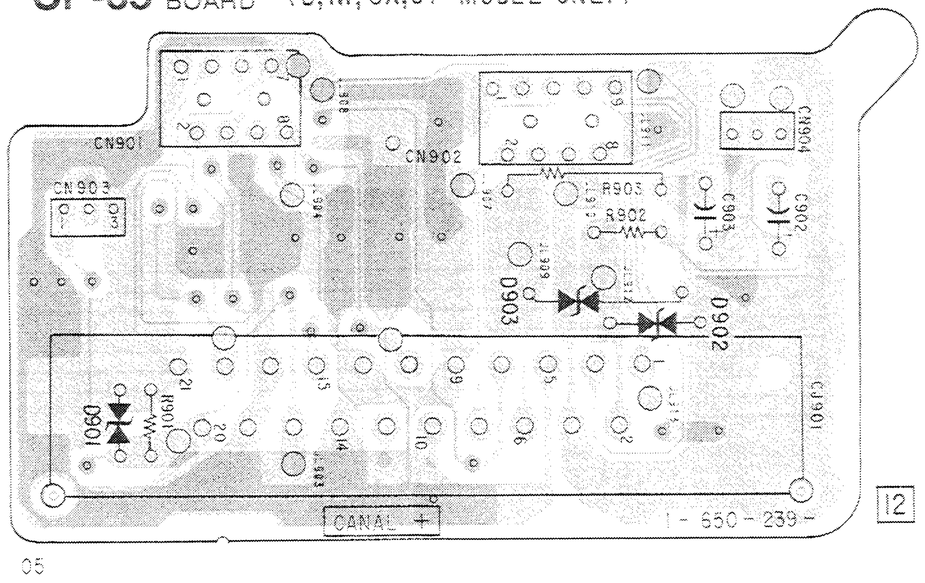
CG-20 BOARD (COMPONENT SIDE)


R408
C417
R407
R423
C418
R411
R417
C425
C404
R415
R414
R402
C407
R416
C427
R405
R406
C440
C413
C412
1-650-249-
31
05

CG-20 BOARD (CONDUCTOR SIDE)

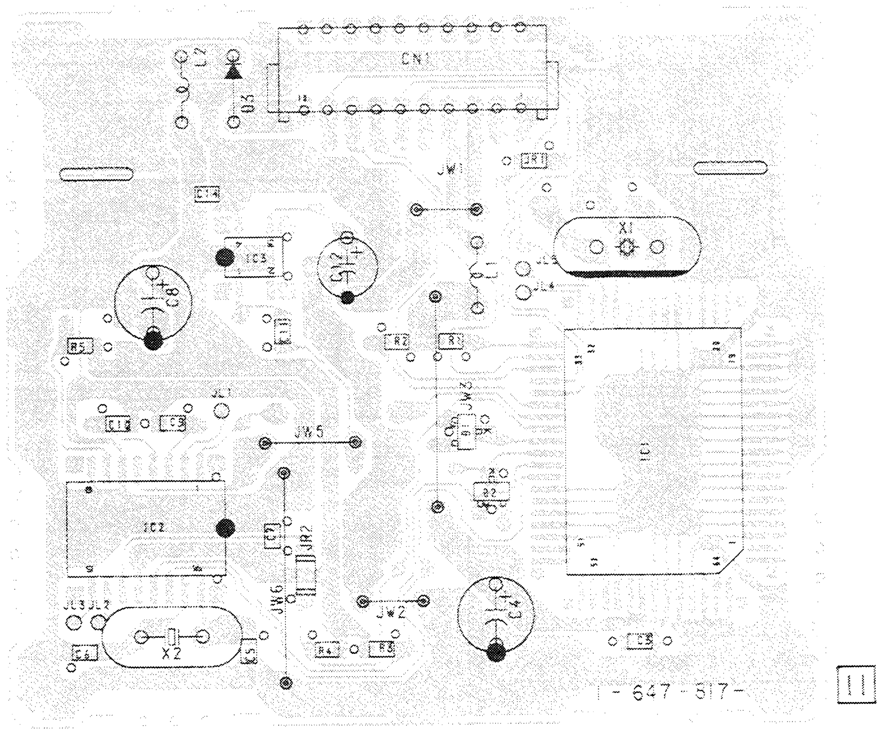

CN401
C416
C419
IC402
L404
C422
C424
C406
L402
L401
C409
X401
①
②
③
1-650-249-
31

CP-65 BOARD (B, NP, UX, UY MODEL ONLY)

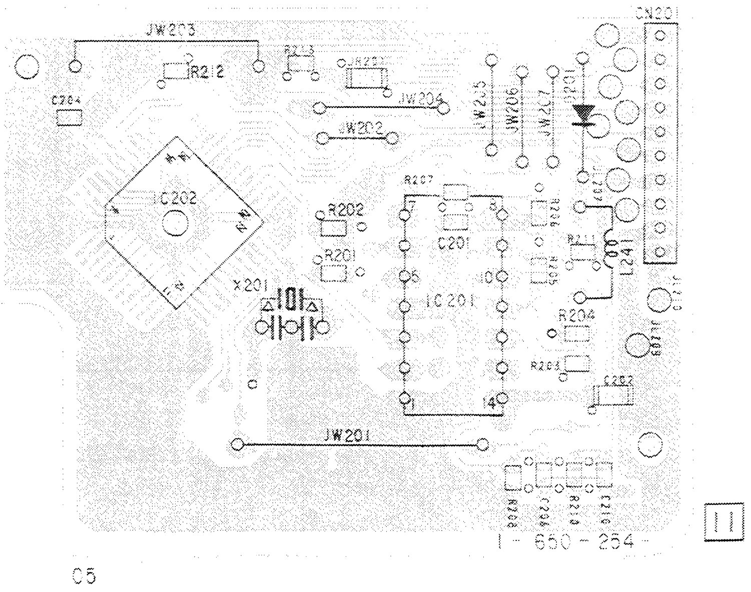

CN901
CN902
CN903
CN904
R903
R902
C903
C902
D903
D902
D901
C901
CANAL +
1-650-239-
12
05

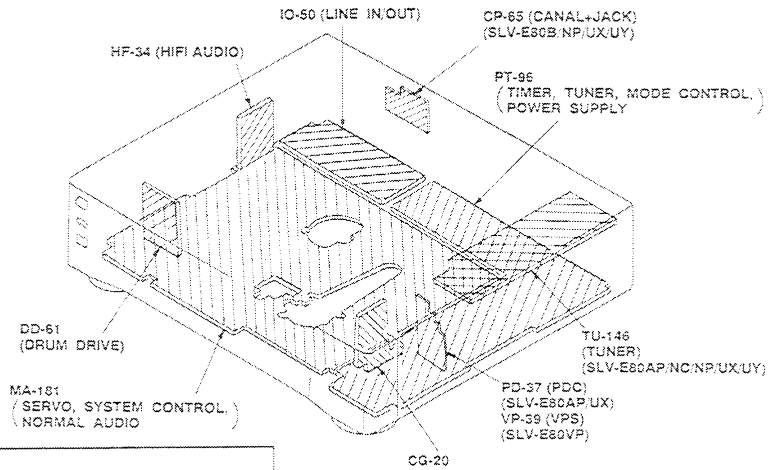
- There is no indication for destination in the printed wiring board diagram.

PD-37 BOARD (AP, UY MODEL ONLY)

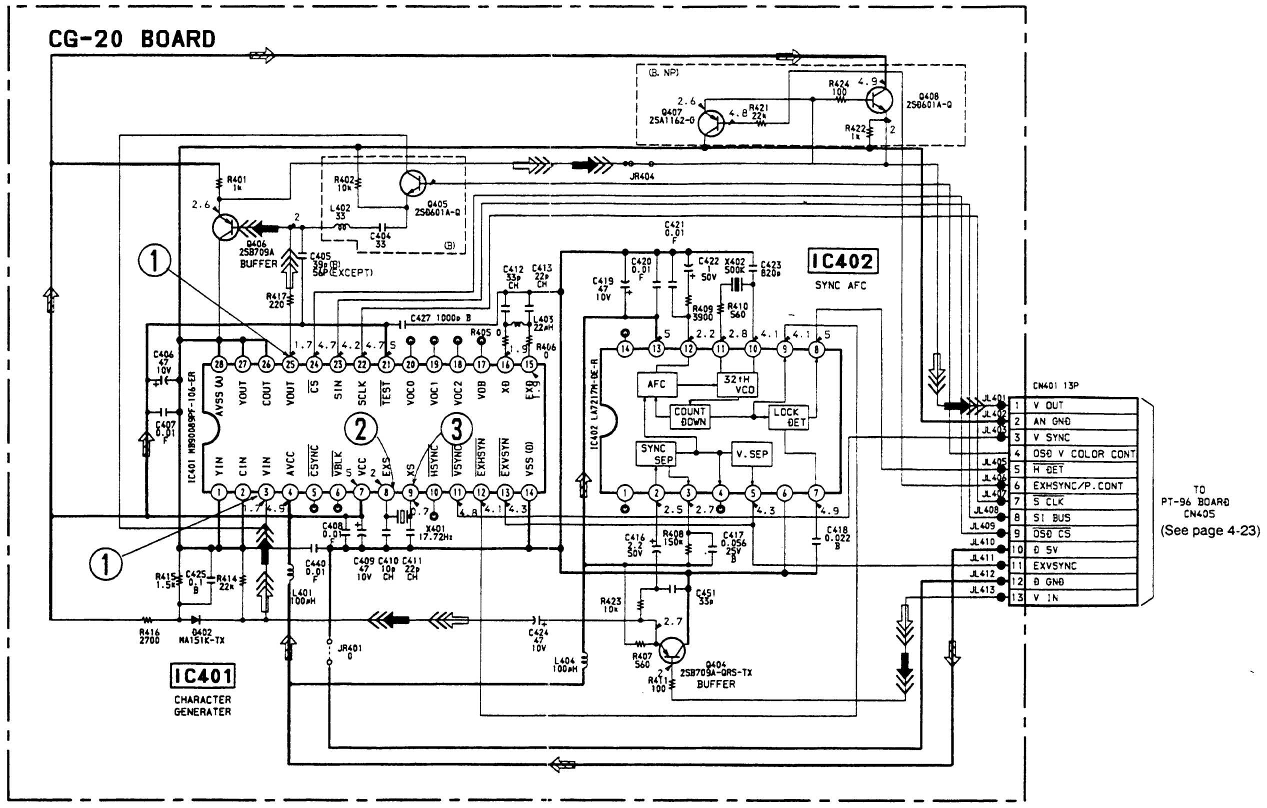

CN1
L2
D5
JW1
X1
IC3
C12
C8
JW5
IC2
IC1
JW6
JR2
JW2
C4
X2
1-647-517-
11
05

VP-39 BOARD (VP MODEL ONLY)

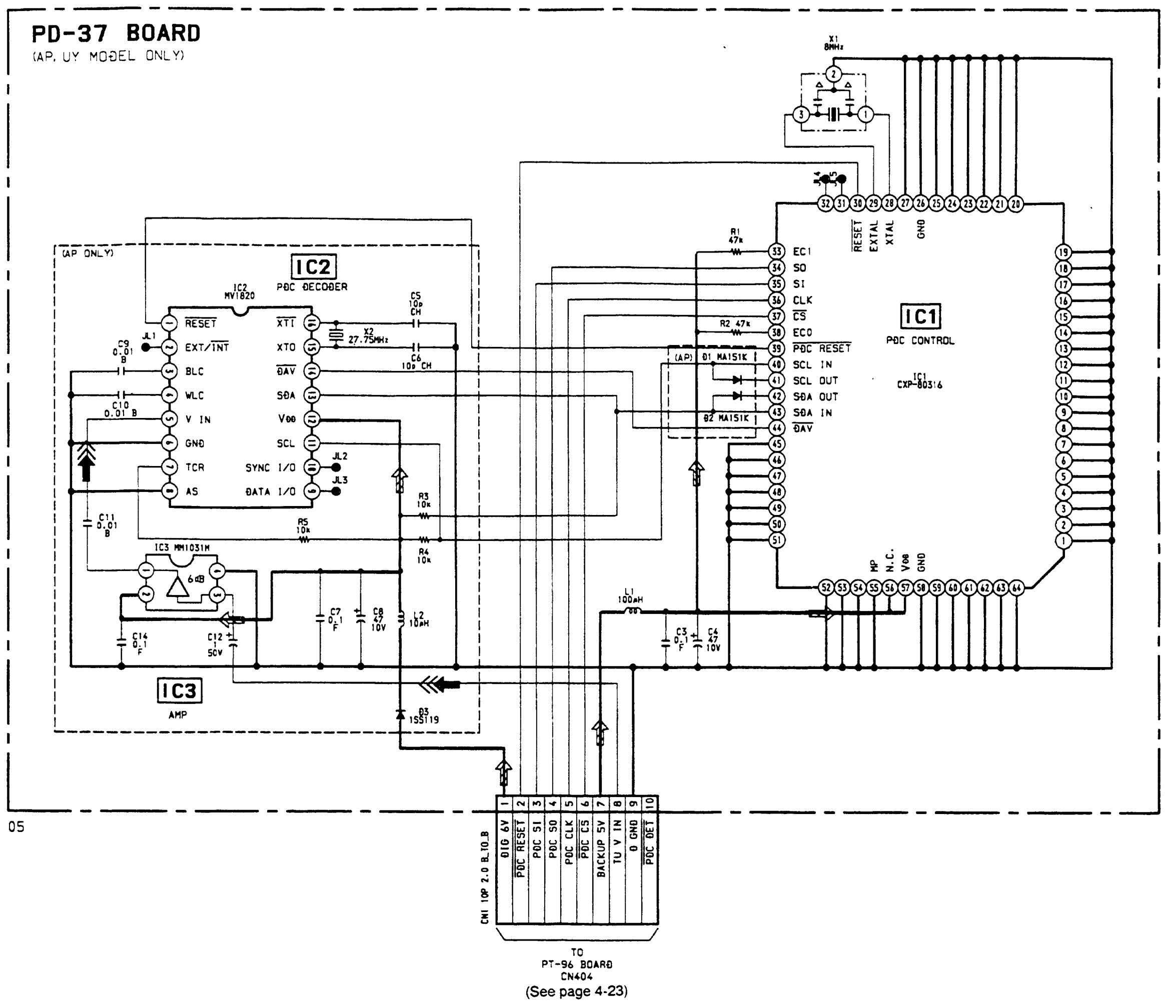

JW203
R212
C204
CN201
JW204
JW202
IC202
R202
R201
X201
C201
IC201
R204
JW201
L241
1-650-254-
11
05


IO-50 (LINE IN/OUT)
CP-65 (CANAL+JACK) (SLV-E80B/NP/UX/UY)
HF-34 (HIFI AUDIO)
PT-95 (TIMER, TUNER, MODE CONTROL, POWER SUPPLY)
DD-61 (DRUM DRIVE)
MA-181 (SERVO, SYSTEM CONTROL, NORMAL AUDIO)
TU-146 (TUNER) (SLV-E80AP/NC/NP/UX/UY)
PD-37 (PDC) (SLV-E80AP/UX)
VP-39 (VPS) (SLV-E80VP)
CG-20 (CHARACTER GENERATOR)

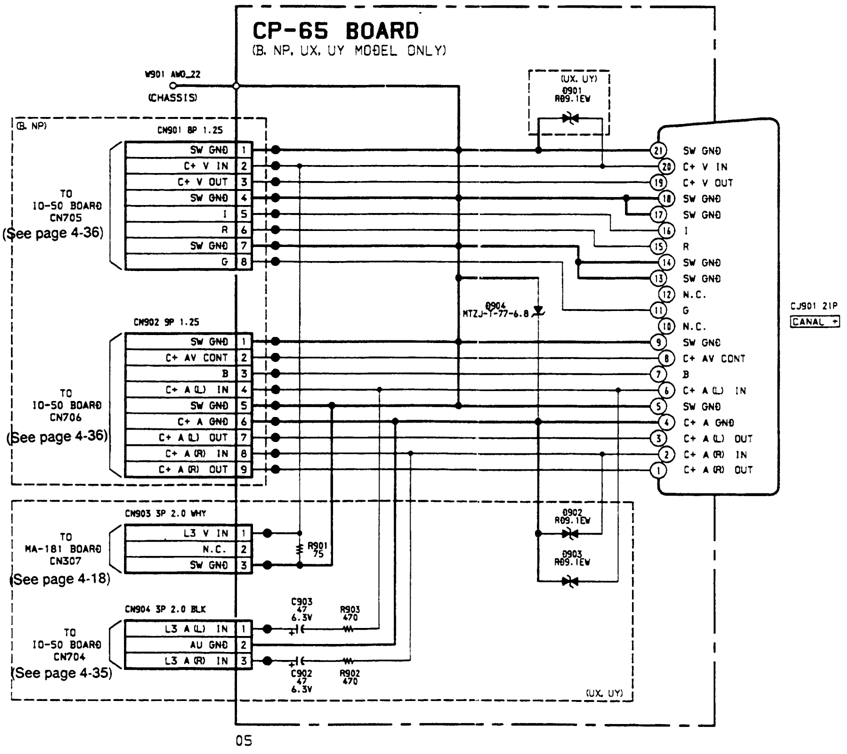
PERIPHERY



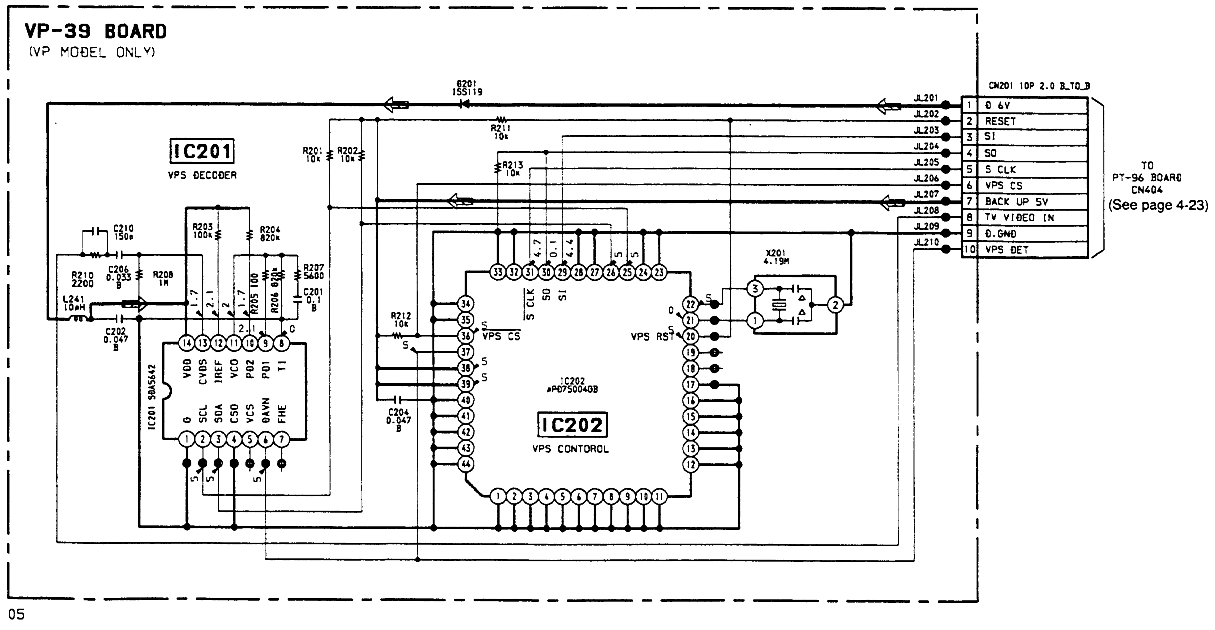
CG-20 BOARD
IC401
CHARACTER GENERATOR
IC402
SYNC AFC
Q405 2SB709A BUFFER
Q404 2SB709A-QRS-TX BUFFER
CN401 13P
1 V OUT
2 AN GND
3 V SYNC
4 OSD V COLOR CONT
5 H DET
6 EXHSYNC/P.CONT
7 S CLK
8 SI BUS
9 OSD CS
10 D 5V
11 EXVSYNC
12 D GND
13 V IN
TO PT-96 BOARD CN405 (See page 4-23)
05



PD-37 BOARD
(AP, UY MODEL ONLY)
(AP ONLY)
IC1
PDC CONTROL
IC1 CXP-80316
IC2
PDC DECODER
IC2 MV1820
IC3
AMP
IC3 MM1031H
X1 8MHz
X2 27.75MHz
CN1 10P 2.0 B_TO_B
D10 6V
PDC RESET
PDC SI
PDC SO
PDC CLK
PDC CS
BACKUP 5V
TU V IN
D GND
PDC DET
TO PT-96 BOARD CN404 (See page 4-23)
05



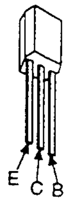
CP-65 BOARD
(B, NP, UX, UY MODEL ONLY)
W901 AWG_22 (CHASSIS)
(B, NP)
CN901 8P 1.25
TO 10-50 BOARD CN705 (See page 4-36)
CN902 9P 1.25
TO 10-50 BOARD CN706 (See page 4-36)
CN903 3P 2.0 WHT
TO MA-181 BOARD CN307 (See page 4-18)
CN904 3P 2.0 BLK
TO 10-50 BOARD CN704 (See page 4-35)
CJ901 21P CANAL +
(UX, UY)
05



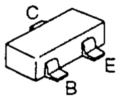
VP-39 BOARD
(VP MODEL ONLY)
IC201
VPS DECODER
IC201 SDA5642
IC202
VPS CONTOROL
IC202 μPD7500408
X201 4.19M
CN201 10P 2.0 B_TO_B
1 D 6V
2 RESET
3 SI
4 SO
5 S CLK
6 VPS CS
7 BACK UP 5V
8 TV VIDEO IN
9 D.GND
10 VPS DET
TO PT-96 BOARD CN404 (See page 4-23)
05

4-3. SEMICONDUCTORS

DTA144ES
DTC144ES
2SC4040-TL2-Q



DTC114TK-T146
MSD601-RT1
UN211L
UN2111
UN2211
UN2213
2SA1162-G
2SA1162Y-TE85L
2SC2712-YG
2SD601A-Q



UN411L
UN4111
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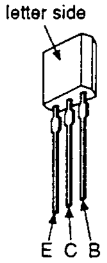
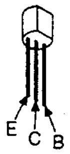
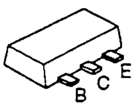

letter side
E
C
B

2SA733-K
2SD655E



2SB1122-S
2SD1834



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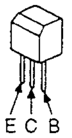
2SD773



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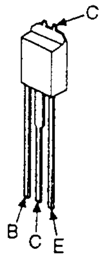

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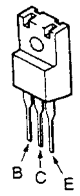

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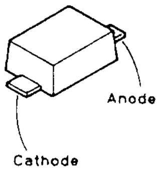
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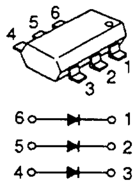
Cathode

IMN10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5
6
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2
3
6
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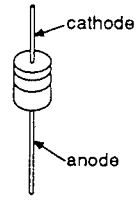
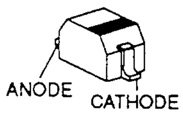
2
4
3

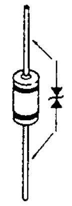
MTZJ-13
MTZJ-4.3
RD33ES-B2
RD4.3ES-B1
RD4.7ES-B2
RD5.1ES-B2
RD6.2ES-B2
RD6.8ES-B2
1SS119
11ES2


cathode
anode

MA110


ANODE
CATHODE

RD9.1E-W



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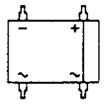

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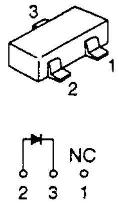
1SS193



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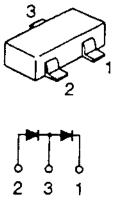

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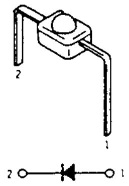

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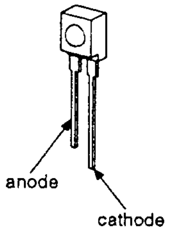
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cathode

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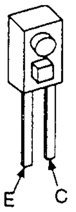
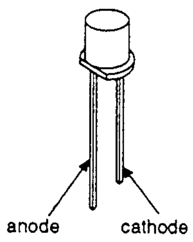


SEL3713K-TP5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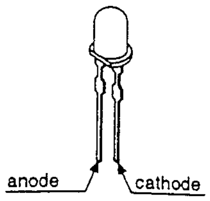
SLR34DC3
SLR34VC3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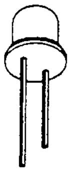
SLR-34MCA49
SLR-34VCA49



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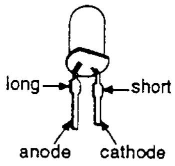

long
short
anode
cathode

SECTION 5
REPAIR PARTS LIST

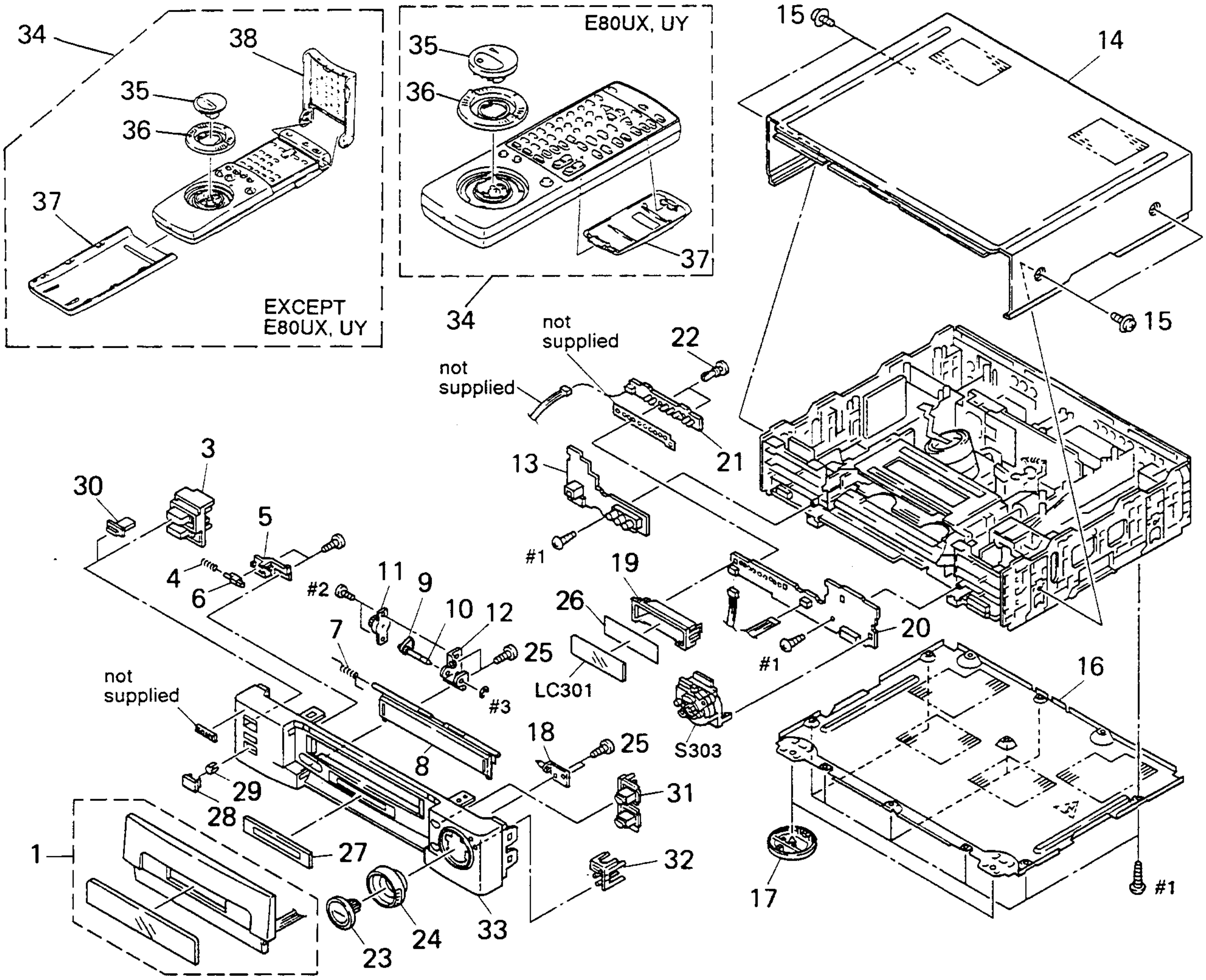
5-1. EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

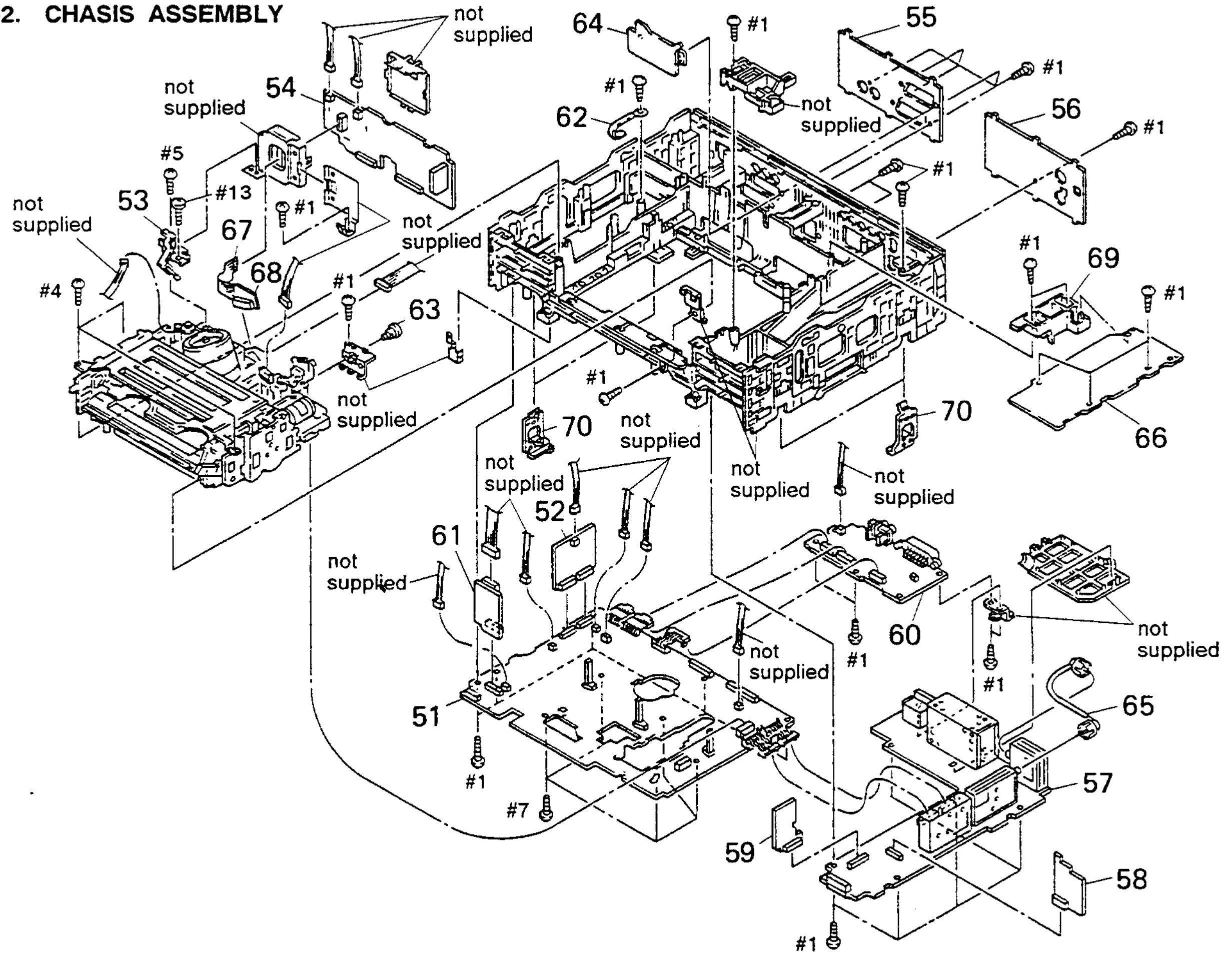
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1-1. FRONT PANEL AND CABINET ASSEMBLIES



Ref. No.	Part No.	Description	Remark
1	1-467-387-11	SWITCH BLOCK, CONTROL (E80AP, UX, UY)	
1	1-467-387-21	SWITCH BLOCK, CONTROL (E80VP)	
1	1-467-387-31	SWITCH BLOCK, CONTROL (E80B)	
1	1-467-387-41	SWITCH BLOCK, CONTROL (E80IT, NC, NP)	
3	3-957-389-01	BUTTON, POWER/EJECT	
4	3-957-388-01	SPRING, COMPRESSION	
* 5	3-957-312-11	HOLDER, LOCK CLAW	
6	3-944-564-01	CLAW, LOCK	
7	3-951-089-01	SPRING (GE), FL	
8	3-951-086-81	DOOR, CASSETTE (EXCEPT E80)	
8	3-957-493-01	DOOR, CASSETTE (E80B)	
9	3-957-382-01	GEAR, FULCRUM	
* 10	3-957-383-01	SHAFT, FULCRUM GEAR	
11	3-319-224-11	DAMPER, SMALL	
* 12	3-957-381-01	PLATE, FULCRUM (LEFT), DOOR	
* 13	A-6720-592-A	MF-243 BOARD, COMPLETE (EXCEPT E80VP)	
* 13	A-6720-596-A	MF-243 BOARD, COMPLETE (E80VP)	
* 14	3-957-479-01	CASE, UPPER	
15	3-710-901-11	SCREW (TP3X8), CASE	
* 16	3-957-480-01	PLATE, BOTTOM	
17	3-957-246-01	INSULATOR	
18	X-3943-587-1	PLATE (RIGHT) ASSY, FULCRUM, DOOR	
* 19	3-957-314-11	HOLDER LCD	
* 20	A-6721-591-A	MF-242 BOARD, COMPLETE (E80B)	
* 20	A-6721-593-A	MF-242 BOARD, COMPLETE (EXCEPT E80B)	
* 21	A-6720-579-A	PL-24 BOARD, COMPLETE	
22	3-957-327-01	RIVET, PUSH	
23	X-3943-591-1	BUTTON ASSY, FUNCTION (EXCEPT E80B)	
23	X-3943-632-1	BUTTON ASSY, FUNCTION (E80B)	
24	X-3943-556-1	RING ASSY, SHUTTLE	
25	4-921-277-11	SCREW (B2.6X8), TAPPING, BIND	
26	3-957-338-01	ILLUMINATOR	
27	3-957-399-11	PLATE, TRANSPARENT	
28	3-957-234-11	FILTER, REMOTE CONTROL	
29	3-951-078-11	REFLECTOR, REMOTE CONTROL	
30	3-951-076-11	LENS, POWER	
31	X-3943-627-1	BUTTON ASSY, P/H	
32	3-957-311-11	LENS, REC	
33	3-958-121-51	PANEL, FRONT (E80UY)	
33	3-957-481-01	PANEL, FRONT (E80AP)	
33	3-957-481-11	PANEL, FRONT (E80UX)	
33	3-957-481-21	PANEL, FRONT (E80IT, VP)	
33	3-957-481-31	PANEL, FRONT (E80B)	
33	3-957-481-41	PANEL, FRONT (E80NP)	
33	3-957-481-51	PANEL, FRONT (E80NC)	
34	1-467-384-11	REMOTE COMMANDER (RMT-V141A) (E80UX, UY)	
34	1-467-385-21	REMOTE COMMANDER (RMT-V142A) (E80NC, NP)	
34	1-467-546-21	REMOTE COMMANDER (RMT-V146A) (E80B)	
34	1-467-546-51	REMOTE COMMANDER (RMT-V146D) (E80AP, IT, VP)	
35	X-3943-637-1	BUTTON ASSY (E80B)	
35	X-3943-638-1	BUTTON ASSY (EXCEPT E80B)	
36	3-957-513-11	SHUTTLE RING	
37	3-708-813-21	COVER, SLIDE (E80NC, NP)	
37	3-708-813-31	COVER, SLIDE (E80AP, IT, VP)	
37	3-708-813-41	COVER, SLIDE (E80B)	
37	3-708-817-01	COVER, BATTERY (E80UX, UY)	
38	3-708-876-01	COVER, ENGLISH (E80AP, IT, NC, NP, VP)	
38	3-708-876-11	COVER, FRENCH (E80B)	
LC301	1-810-354-11	DISPLAY PANEL, LIQUID CRYSTAL (EXCEPT E80B)	
LC301	1-810-355-11	DISPLAY PANEL, LIQUID CRYSTAL (E80B)	
S303	1-692-726-11	SWITCH, ROTARY (LED) (PLAY/STOP/REW/FF)	

5-1-2. CHASIS ASSEMBLY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#1
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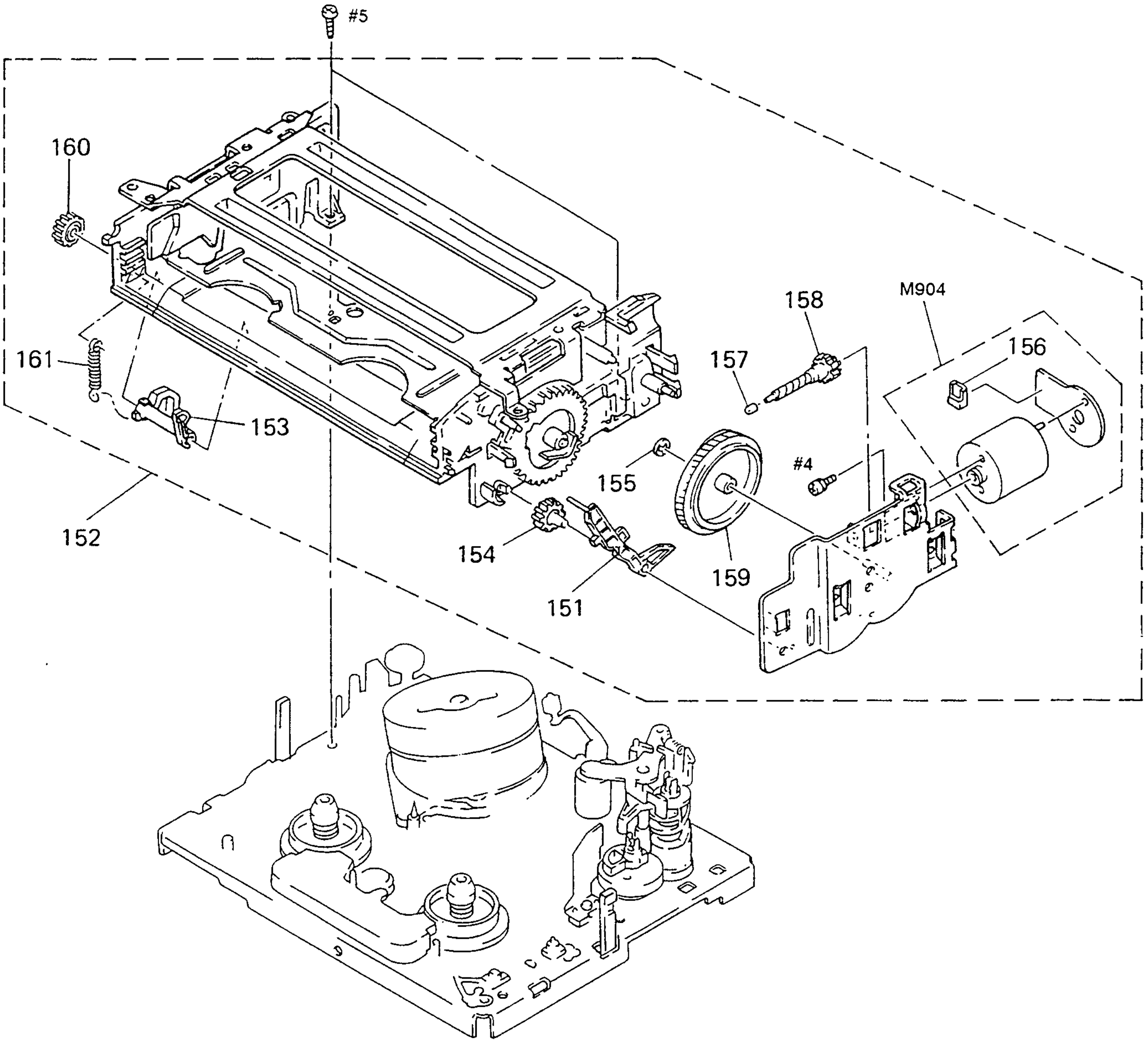
65
#1
57
#7
59
58
#1

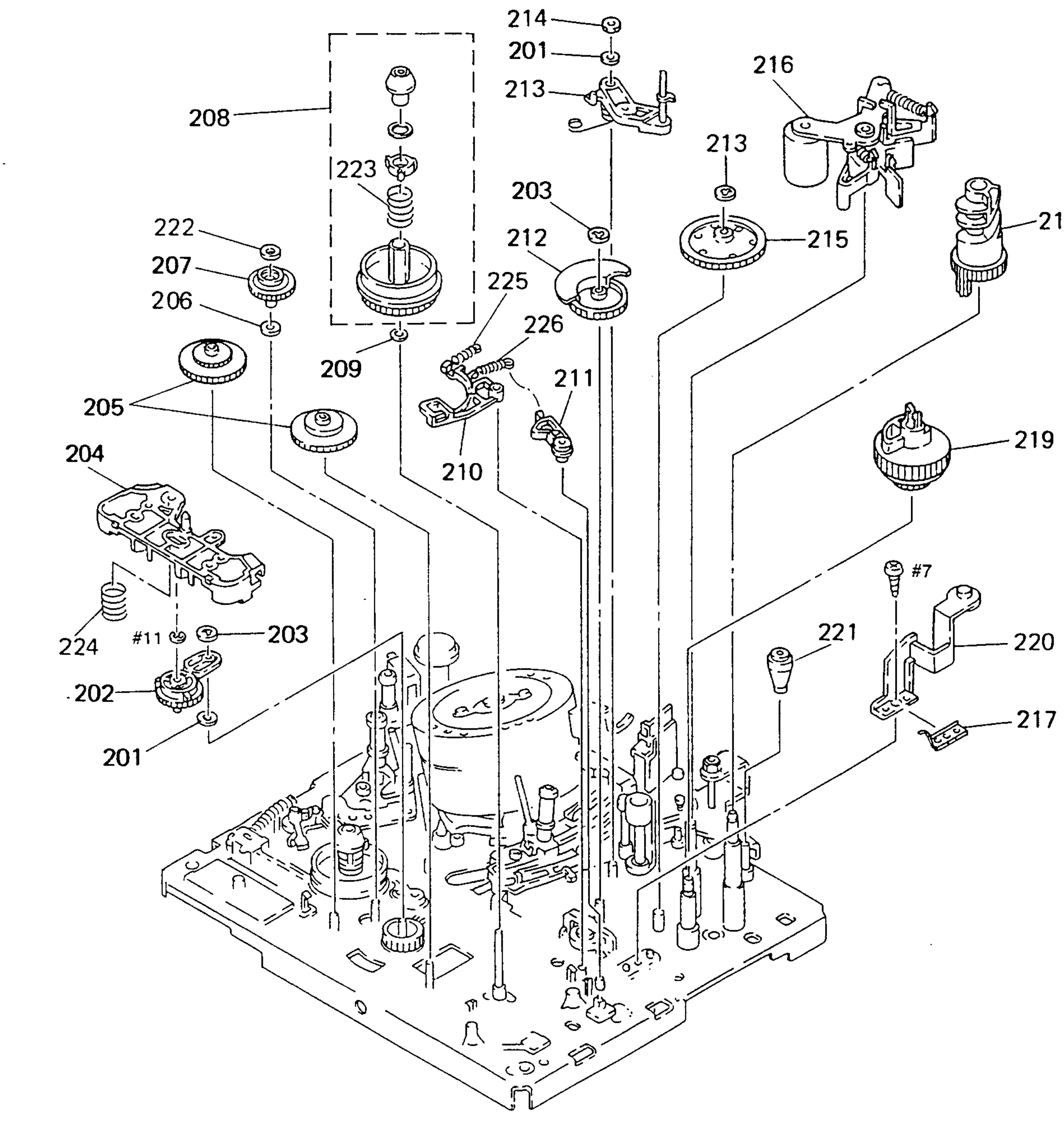
Ref. No.	Part No.	Description	Remark
* 51	A-6782-270-A	MA-181 BOARD, COMPLETE (E80UX, UY)	
* 51	A-6782-271-A	MA-181 BOARD, COMPLETE (E80NP)	
* 51	A-6782-274-A	MA-181 BOARD, COMPLETE (E80B)	
* 51	A-6782-276-A	MA-181 BOARD, COMPLETE (E80AP, IT, NC, VP)	
* 52	A-6721-595-A	HF-34 BOARD, COMPLETE	
53	X-3943-595-1	GROUND ASSY (GT), SHAFT	
* 54	A-6727-542-A	RV-33 BOARD, COMPLETE (E80B)	
* 54	A-6727-545-A	RV-33 BOARD, COMPLETE (EXCEPT E80B)	
* 55	3-957-489-01	PLATE, JACK (IO) (E80AP, IT, NC, VP)	
* 55	3-957-489-11	PLATE, JACK (IO) (E80B)	
* 55	3-957-489-21	PLATE, JACK (IO) (E80NP)	
* 55	3-957-489-31	PLATE, JACK (IO) (E80UX, UY)	
* 56	3-957-491-01	PLATE, JACK (TU) (EXCEPT E80B)	
* 56	3-957-491-11	PLATE, JACK (TU) (E80B)	
* 57	A-6727-537-A	PT-96 BOARD, COMPLETE (E80UX, UY)	
* 57	A-6727-538-A	PT-96 BOARD, COMPLETE (E80NP)	
* 57	A-6727-541-A	PT-96 BOARD, COMPLETE (E80B)	
* 57	A-6727-544-A	PT-96 BOARD, COMPLETE (E80AP)	
* 57	A-6727-546-A	PT-96 BOARD, COMPLETE (E80VP)	
* 57	A-6727-547-A	PT-96 BOARD, COMPLETE (E80NC)	
* 57	A-6727-549-A	PT-96 BOARD, COMPLETE (E80IT)	
* 58	A-6781-279-A	PD-37 BOARD, COMPLETE (E80AP)	
* 58	A-6781-281-A	VP-39 BOARD, COMPLETE (E80VP)	
* 58	A-6781-309-A	PD-37 BOARD, COMPLETE (E80UY)	
* 59	A-6754-660-A	CG-20 BOARD, COMPLETE (E80B)	
* 59	A-6754-662-A	CG-20 BOARD, COMPLETE (E80NP)	
* 59	A-6754-691-A	CG-20 BOARD, COMPLETE (E80AP, IT, NC, UX, UY, VP)	
* 60	A-6754-655-A	IO-50 BOARD, COMPLETE (E80UX, UY)	
* 60	A-6754-659-A	IO-50 BOARD, COMPLETE (E80B, NP)	
* 60	A-6754-661-A	IO-50 BOARD, COMPLETE (E80AP, IT, NC)	
* 60	A-6754-663-A	IO-50 BOARD, COMPLETE (E80VP)	
* 61	A-6781-280-A	DD-61 BOARD, COMPLETE	
62	3-703-150-11	STOPPER, WIRING	
63	3-736-055-01	SCREW (3X8), TAPPING	
* 64	A-6781-275-A	CP-65 BOARD, COMPLETE (E80B, NP)	
* 64	A-6781-282-A	CP-65 BOARD, COMPLETE (E80UX, UY)	
65	1-555-110-00	CABLE, PIN (E80NC, NP, UX, UY)	
65	1-558-924-21	CABLE, PIN (E80AP, B, IT, VP)	
* 66	A-6754-656-A	TU-146 BOARD, COMPLETE (E80UX, UY)	
* 66	A-6754-657-A	TU-146 BOARD, COMPLETE (E80NC, NP)	
67	1-650-282-11	FP-72 FLEXIBLE BOARD	
68	1-695-486-11	CONNECTOR, BOARD TO BOARD 10P	
* 69	3-957-546-01	HOLDER (TU), PCB (E80NC, NP, UX)	
* 70	3-957-387-01	STOPPER (GT), UPPER CASE	

5-1-3. FL CASSETTE COMPARTMENT ASSEMBLY



Ref. No.	Part No.	Description	Remark
151	3-741-935-06	LEVER, FLAT DOOR	
152	A-6751-421-A	FL BLOCK ASSY (M2)	
153	3-736-163-01	LEVER, ERASING PROTECTION	
154	X-3727-775-2	GEAR (RIGHT) ASSY, MIDWAY	
155	3-696-510-01	WASHER (3), STOPPER	
156	1-564-413-11	PIN, CONNECTOR 3P	
157	3-716-144-02	RETAINER, WORM	
158	3-736-100-01	GEAR (FL), WORM	
159	3-736-164-01	WHEEL (FL), WORM	
160	3-736-044-02	GEAR (LEFT), MIDWAY	
161	3-739-687-01	SPRING, TENSION (REC PROOF)	
M904	X-3727-784-1	MOTOR ASSY	

5-1-4. MECHANISM CHASSIS ASSEMBLY (1)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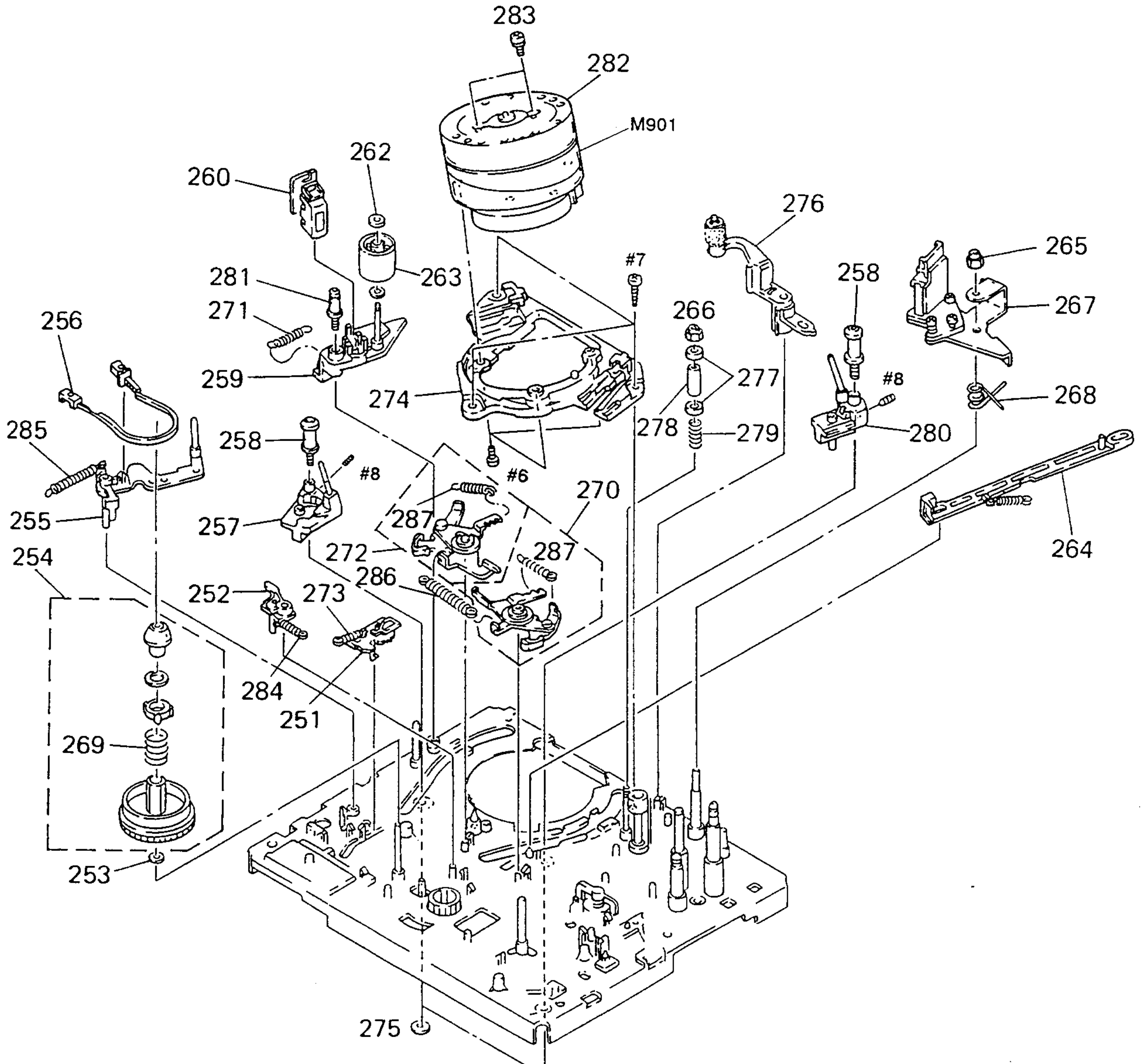
204
210
#7
221
220
224
#11
203
202
217
201

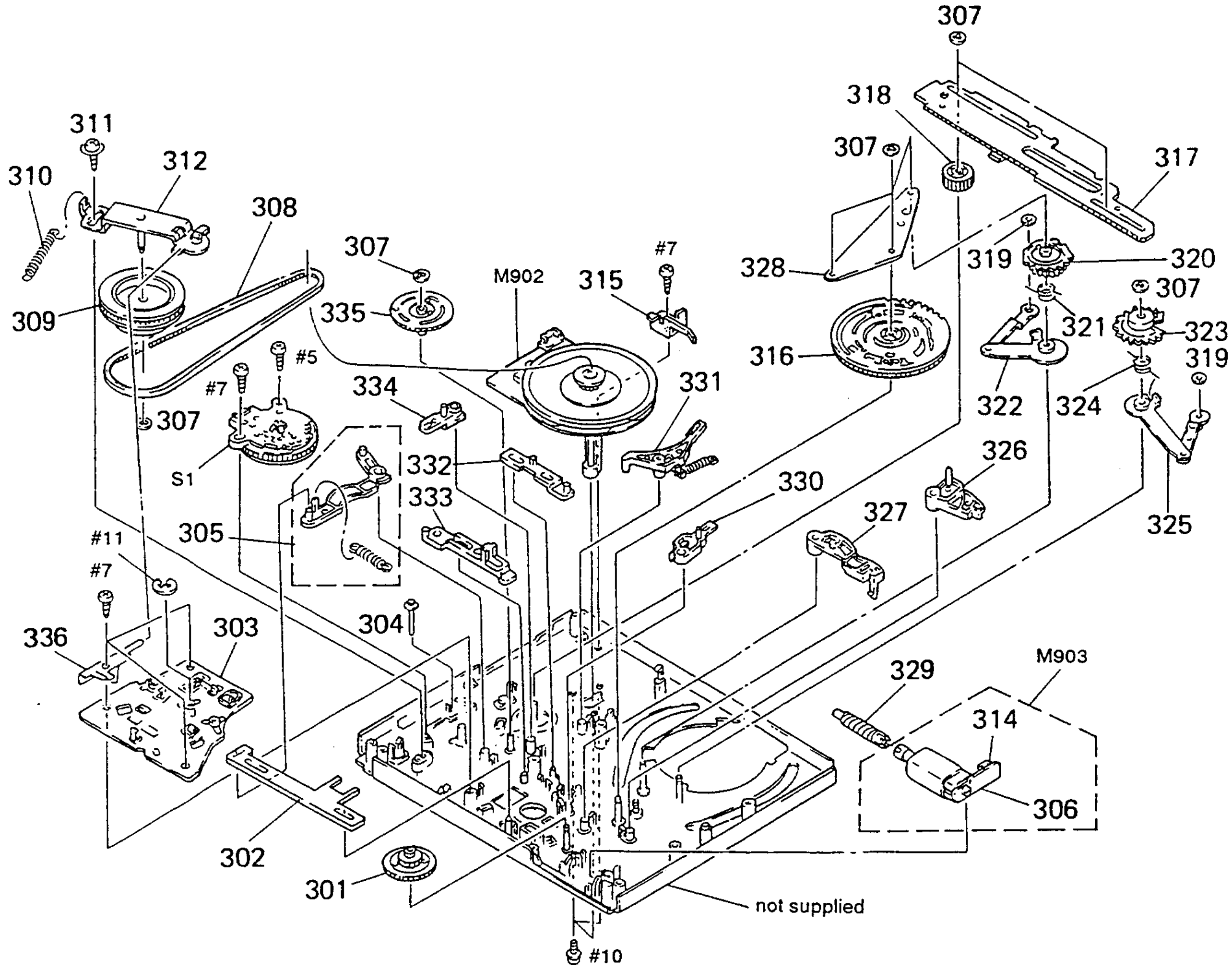
Ref. No.	Part No.	Description	Remark
201	3-701-748-00	CLAMP	
202	X-3727-776-1	ARM ASSY, PENDULUM	
203	3-669-595-00	WASHER (2), STOPPER	
204	3-736-172-02	RELEASE, LOCK, REEL	
205	X-3727-795-1	GEAR ASSY, RELAY	
206	3-736-074-01	RETAINER (SMALL), THRUST	
207	3-736-037-01	GEAR, REW	
208	X-3727-789-1	TABLE ASSY, REEL	
209	3-738-212-21	RETAINER, THRUST, REEL TABLE	
210	X-3733-335-1	BRAKE ASSY (AT), T SOFT	
211	3-736-105-01	ARM, REV BRAKE	
212	3-736-143-01	GEAR, RVS CAM	
213	X-3942-218-1	ARM ASSY, RVS	
214	3-736-740-01	NUT (M2X0.25), NYLON	
215	3-736-116-01	GEAR, COMMUNICATION	
216	X-3727-770-1	PINCH ROLLER BLOCK ASSY	
217	3-744-227-01	SPRING, FL GROUND	
218	3-952-182-01	CAM, ELEVATOR	
219	3-943-700-01	GEAR, PRESS CAM	
220	3-946-652-01	OPENER, LID	
221	3-738-250-01	SCREW, AC ADJUSTMENT	
222	3-736-069-01	RETAINER, SPRING	
223	3-739-621-01	SPRING, COMPRESSION	
224	3-736-020-11	SPRING, COMPRESSION	
225	3-736-024-01	SPRING, TENSION (FOR T SOFT BRAKE)	
226	3-736-025-01	SPRING, TENSION (REW BRAKE)	

5-1-5. MECHANISM CHASSIS ASSEMBLY (2)



Ref.No.	Part No.	Description	Remark
* 251	A-6759-483-A	TAKE-UP BLOCK ASSY, S	
252	X-3727-773-1	ARM ASSY (S), SOFT BRAKE	
253	3-738-212-21	RETAINER, THRUST, REEL TABLE	
254	X-3941-194-1	TABLE ASSY, REEL, S	
255	X-3727-772-5	ARM ASSY, TENSION REGULATOR	
256	X-3727-797-1	BAND ASSY, TENSION REGULATOR	
257	X-3272-786-1	SHUTTLE (LEFT) ASSY	
258	X-3733-301-1	ROLLER ASSY, GUIDE	
259	X-3942-897-1	BASE ASSY, STABILIZER	
260	1-543-647-11	HEAD, FE	
262	3-741-925-01	RING, RETAINING	
263	3-946-129-01	B STABLIZER	
264	X-3743-517-1	LEVER ASSY, RELEASE, C ROLLER	
265	3-942-867-01	NUT, AC HEIGHT ADJUSTMENT	
266	3-942-866-01	NUT (M3)(3X0.5), NYLON	
267	A-6761-129-C	HEAD BLOCK ASSY, ACE	
268	3-946-148-01	SPRING, TORSION	
269	3-739-621-01	SPRING, COMPRESSION	
270	X-3729-926-1	BRAKE ASSY (2), T	
271	3-736-745-01	SPRING, TENSION	
272	X-3733-336-2	BRAKE ASSY (2)AT, S	
273	3-738-284-01	SPRING, TENSION	
274	X-3727-791-2	DRUM (BASE) ASSY	
275	3-736-073-01	SLIDER, POLYETHYLENE	
276	A-6747-267-A	ARM BLOCK ASSY (S), C ROLLER	
277	3-736-733-02	FLANGE, 7 GUIDE	
278	3-736-730-01	SLEEVE, #7 GUIDE	
279	3-749-099-01	SPRING (#7 GUIDE), COMPRESSION	
280	X-3727-787-1	SHUTTLE (RIGHT) ASSY	
281	X-3727-788-1	ROLLER ASSY, GUIDE, #2	
282	1-550-872-11	DRUM ASSY, ROTARY UPPER (DZR-60-R)	
283	2-643-205-01	SCREW (PSW3X8)	
284	3-736-047-01	SPRING, TENSION (S SOFT)	
285	3-733-389-01	SPRING, TENSION (TENSION REGULATOR AT)	
286	3-738-221-01	SPRING, TENSION (MAIN BRKE 1)	
287	3-738-220-01	SPRING, TENSION (MAIN BRKE 2)	
M901	1-550-873-11	LOWER DRUM ASSY DZL-60A-R	

5-1-6. MECHANISM CHASSIS ASSEMBLY (3)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M902
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M903
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Ref. No.	Part No.	Description	Remark
301	3-736-015-01	WHEEL (CAM), WORM	
302	3-736-158-01	PLATE, SLIDE, PENDULUM	
303	A-6739-096-A	CHASSIS BLOCK ASSY, SUB	
304	3-736-091-01	PIN, SWITCH	
305	X-3729-924-1	ARM ASSY, PENDULUM FUNCTION	
* 306	1-633-460-11	CA-41 BOARD	
307	3-669-595-00	WASHER (2), STOPPER	
308	3-736-013-01	BELT, TIMING	
309	X-3727-782-1	PULLEY ASSY	
310	3-736-089-01	SPRING, TENSION	
311	3-749-796-11	SCREW, TAPPING +BVTP WASHER	
312	X-3727-761-1	ARM ASSY, ADJUSTMENT	
314	1-564-013-41	PIN, CONNECTOR 3P	
315	3-736-744-01	RETAINER, ROTOR	
316	3-736-176-01	GEAR, CAM	
317	3-736-177-01	PLATE, SLIDE, MODE	
318	3-733-394-01	GEAR, RVS RELAY	
319	3-736-069-01	RETAINER, SPRING	
320	3-736-148-01	GEAR (RIGHT), THREADING	
321	3-736-092-01	SPRING (RIGHT), TORSION	
322	X-3727-777-1	ARM (RIGHT) ASSY, LOADING	
323	3-736-147-01	GEAR (LEFT), THREADING	
324	3-736-040-01	SPRING (LEFT), TORSION	
325	X-3727-778-1	ARM (LEFT) ASSY, LOADING	
326	3-736-142-01	ARM, TENSION REGULATOR FUNCTION	
327	3-736-140-01	ARM, S TAKE-UP	
328	3-733-396-01	HOLDER, CAM GEAR	
329	3-733-395-01	GEAR (CAM), WORM	
330	3-733-397-01	ARM, BRAKE FUNCTION	
331	X-3727-769-1	BRAKE ASSY, CAP	
332	3-733-398-01	PLATE, SLIDE, BRAKE	
333	3-736-103-01	PLATE, SLIDE, LIMITER	
334	3-736-016-01	ARM, LIMITER FUNCTION	
335	3-736-170-01	GEAR, RKB CAM	
336	3-741-950-01	SPRING PLATE, SC GROUND (AT)	
M902	8-835-489-01	MOTOR, DC U-26K	
M903	X-3733-302-1	MOTOR ASSY, CAM	
S1	1-571-920-11	SWITCH, ROTARY (CAM ENCODER)	

5-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark
*	A-6754-660-A	CG-20 BOARD, COMPLETE (E80B) **********************	
*	A-6754-662-A	CG-20 BOARD, COMPLETE (E80NP) **********************	
*	A-6754-691-A	CG-20 BOARD, COMPLETE ********************** (E80AP, IT, NC, UX, UY, VP) (Ref. NO. 4,000 Series)	
		< CAPACITOR >	
C404	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	(E80B)
C405	1-163-107-00	CERAMIC CHIP 39PF 5% 50V	(E80B)
C405	1-163-245-11	CERAMIC CHIP 56PF 5% 50V	(E80AP, IT, NC, NP, UX, UY, VP)
C406	1-124-589-11	ELECT 47uF 20% 16V	
C407	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C408	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C409	1-124-126-00	ELECT 47uF 20% 10V	(E80B, NP)
C409	1-124-589-11	ELECT 47uF 20% 16V	(E80AP, IT, NC, UX, UY, VP)
C410	1-163-227-11	CERAMIC CHIP 10PF 0.5PF 50V	
C411	1-163-235-11	CERAMIC CHIP 22PF 5% 50V	
C412	1-163-239-11	CERAMIC CHIP 33PF 5% 50V	
C413	1-163-235-11	CERAMIC CHIP 22PF 5% 50V	
C416	1-124-257-00	ELECT 2.2uF 20% 50V	
C417	1-164-343-11	CERAMIC CHIP 0.056uF 10% 25V	
C418	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C419	1-124-589-11	ELECT 47uF 20% 16V	
C420	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C421	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C422	1-126-301-11	ELECT 1uF 20% 50V	
C423	1-163-139-00	CERAMIC CHIP 820PF 5% 50V	
C424	1-124-589-11	ELECT 47uF 20% 16V	
C425	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C427	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C440	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C451	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
* CN401	1-573-827-11	CONNECTOR, BOARD TO BOARD 13P	
		< DIODE >	
D402	8-719-801-48	DIODE 1SS193	
		< IC >	
IC401	8-759-247-44	IC MB90090PF-107-ER	
IC402	8-759-164-09	IC LA7218M	
		< JUMPER RESISTOR >	
JR401	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR404	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80AP, IT, NC, NP, UX, UY, VP)
		< COIL >	
L401	1-408-982-11	INDUCTOR 100uH	
L402	1-408-976-21	INDUCTOR 33uH	(E80B)
L403	1-408-974-21	INDUCTOR 22uH	
L404	1-408-982-11	INDUCTOR 100uH	
		< TRANSISTOR >	
Q404	8-729-216-22	TRANSISTOR 2SA1162-G	
Q406	8-729-216-22	TRANSISTOR 2SA1162-G	
Q405	8-729-422-27	TRANSISTOR 2SD601A-Q	(E80B)
Q407	8-729-216-22	TRANSISTOR 2SA1162-G	(E80B, NP)
Q408	8-729-422-27	TRANSISTOR 2SD601A-Q	(E80B, NP)
		< RESISTOR >	
R401	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R402	1-216-222-00	METAL GLAZE 10K 5% 1/8W	(E80B)
R405	1-216-295-00	METAL CHIP 0 5% 1/10W	
R406	1-216-295-00	METAL CHIP 0 5% 1/10W	
R407	1-216-043-00	METAL CHIP 560 5% 1/10W	
R408	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R409	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R410	1-216-043-00	METAL CHIP 560 5% 1/10W	
R411	1-216-025-00	METAL CHIP 100 5% 1/10W	
R414	1-216-081-00	METAL CHIP 22K 5% 1/10W	

Ref. No.	Part No.	Description				Remark
R415	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R416	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R417	1-216-033-00	METAL CHIP	220	5%	1/10W	
R421	1-216-081-00	METAL CHIP	22K	5%	1/10W	(E80B, NP)
R422	1-216-049-00	METAL CHIP	1K	5%	1/10W	(E80B, NP)
R423	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R424	1-216-025-00	METAL CHIP	100	5%	1/10W	(E80B, NP)

< VIBRATOR >

X401	1-577-289-11	VIBRATOR, CRYSTAL (17.72MHz)
X402	1-577-165-11	VIBLATOR, CERAMIC (500KHz)

****

* A-6781-275-A CP-65 BOARD, COMPLETE (E80B, NP)

****

* A-6781-282-A CP-65 BOARD, COMPLETE (E80UX, UY)

****

(Ref. NO. 9,000 Series)

< CAPACITOR >

C902	1-126-154-11	ELECT	47uF	20%	6.3V	(E80UX, UY)
C903	1-126-154-11	ELECT	47uF	20%	6.3V	(E80UX, UY)

< CONNECTOR >

CJ901	1-568-016-11	SOCKET, PIN 21P (CANAL +)	
* CN901	1-691-620-21	SOCKET, CONNECTOR 8P	(E80B, NP)
* CN902	1-691-621-11	SOCKET, CONNECTOR 9P	(E80B, NP)
* CN903	1-564-013-11	PIN, CONNECTOR 3P	(E80UX, UY)
CN904	1-564-013-21	PIN, CONNECTOR 3P	(E80UX, UY)

< DIODE >

D901	8-719-108-12	DIODE	RD9.1EW	(E80UX, UY)
D902	8-719-108-12	DIODE	RD9.1EW	(E80UX, UY)
D903	8-719-108-12	DIODE	RD9.1EW	(E80UX, UY)

< RESISTOR >

R901	1-247-804-11	CARBON	75	5%	1/4W	(E80UX, UY)
R902	1-249-413-11	CARBON	470	5%	1/4W	F (E80UX, UY)
R903	1-249-413-11	CARBON	470	5%	1/4W	F (E80UX, UY)

****

Ref. No. | Part No. | Description | Remark

* A-6781-280-A DD-61 BOARD, COMPLETE

****

(Ref. NO. 2,000 Series)

< CAPACITOR >

C550	1-124-927-11	ELECT	4.7uF	20%	100V
C551	1-124-927-11	ELECT	4.7uF	20%	100V
C552	1-124-927-11	ELECT	4.7uF	20%	100V
C553	1-124-907-11	ELECT	10uF	20%	50V
C554	1-124-907-11	ELECT	10uF	20%	50V
C555	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C556	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C557	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C558	1-162-852-11	CERAMIC	0.15uF	10%	16V
C559	1-162-851-11	CERAMIC	0.1uF	10%	16V
C560	1-124-907-11	ELECT	10uF	20%	50V
C581	1-124-925-11	ELECT	2.2uF	20%	100V
C582	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C583	1-126-233-11	ELECT	22uF	20%	50V

< CONNECTOR >

CN501	1-564-726-11	PIN HEADER, ANGLE 10P
CN502	1-573-824-11	CONNECTOR, BOARD TO BOARD 10P

< IC >

IC501	8-759-420-83	IC	AN3814K
IC503	8-759-998-92	IC	LM393D
IC581	8-759-970-89	IC	BA10358F

< JUMPER RESISTOR >

JR501	1-216-296-00	METAL CHIP	0	5%	1/8W
JR502	1-216-296-00	METAL CHIP	0	5%	1/8W
JR503	1-216-296-00	METAL CHIP	0	5%	1/8W
JR504	1-216-296-00	METAL CHIP	0	5%	1/8W

< COIL >

L581	1-410-513-11	INDUCTOR 22uH

< RESISTOR >

R550	1-216-005-00	METAL CHIP	15	5%	1/10W	
R551	1-216-005-00	METAL CHIP	15	5%	1/10W	
R552	1-216-005-00	METAL CHIP	15	5%	1/10W	
R553	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R554	1-216-347-11	METAL OXIDE	0.68	5%	1W	F
R555	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R556	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R557	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R558	1-216-222-00	METAL GLAZE	10K	5%	1/8W	

Ref. No.	Part No.	Description			Remark
R559	1-216-073-00	METAL CHIP	10K	5%	1/10W
R581	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R582	1-216-079-00	METAL CHIP	18K	5%	1/10W
R583	1-216-089-91	METAL GLAZE	47K	5%	1/10W

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* A-6721-595-A HF-34 BOARD, COMPLETE

****

(Ref. NO. 6,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C101	1-124-907-11	ELECT	10uF	20%	50V
C102	1-124-907-11	ELECT	10uF	20%	50V
C103	1-124-927-11	ELECT	4.7uF	20%	100V
C104	1-124-927-11	ELECT	4.7uF	20%	100V
C105	1-124-126-00	ELECT	47uF	20%	10V
C106	1-124-126-00	ELECT	47uF	20%	10V
C107	1-124-126-00	ELECT	47uF	20%	10V
C108	1-126-962-11	ELECT	3.3uF	20%	50V
C109	1-126-962-11	ELECT	3.3uF	20%	50V
C110	1-126-962-11	ELECT	3.3uF	20%	50V
C111	1-126-962-11	ELECT	3.3uF	20%	50V
C112	1-126-233-11	ELECT	22uF	20%	50V
C113	1-126-233-11	ELECT	22uF	20%	50V
C114	1-124-252-00	ELECT	0.33uF	20%	50V
C115	1-124-443-00	ELECT	100uF	20%	10V
C116	1-124-443-00	ELECT	100uF	20%	10V
C117	1-124-034-51	ELECT	33uF	20%	16V
C118	1-137-372-11	FILM	0.022uF	5%	50V
C119	1-137-372-11	FILM	0.022uF	5%	50V
C120	1-137-370-11	FILM	0.01uF	5%	50V
C121	1-137-370-11	FILM	0.01uF	5%	50V
C122	1-137-367-11	FILM	0.0033uF	5%	50V
C123	1-137-367-11	FILM	0.0033uF	5%	50V
C124	1-137-364-11	FILM	0.001uF	5%	50V
C125	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C126	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C127	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C128	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C129	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C130	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C131	1-137-372-11	FILM	0.022uF	5%	50V
C132	1-137-372-11	FILM	0.022uF	5%	50V
C133	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C134	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C135	1-163-038-00	CERAMIC CHIP	0.1uF		25V

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
* CN101	1-573-825-11	CONNECTOR, BOARD TO BOARD 11P	
* CN102	1-573-825-11	CONNECTOR, BOARD TO BOARD 11P	
* CN103	1-564-013-11	PIN, CONNECTOR 3P	

< DIODE >

Ref. No.	Part No.	Description	Remark
D101	8-719-404-46	DIODE MA110	

< IC >

Ref. No.	Part No.	Description	Remark
IC101	8-759-188-81	IC XLH7776K-VP	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q101	8-729-804-41	TRANSISTOR 2SB1122-S	
Q102	8-729-807-12	TRANSISTOR 2SD1802-S	
Q103	8-729-421-19	TRANSISTOR UN2213	
Q104	8-729-421-19	TRANSISTOR UN2213	

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R101	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R102	1-216-678-11	METAL CHIP	13K	0.5%	1/10W
R103	1-216-083-00	METAL CHIP	27K	5%	1/10W
R104	1-216-081-00	METAL CHIP	22K	5%	1/10W
R105	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R106	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R107	1-216-083-00	METAL CHIP	27K	5%	1/10W
R108	1-216-075-00	METAL CHIP	12K	5%	1/10W
R109	1-216-075-00	METAL CHIP	12K	5%	1/10W
R110	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R111	1-216-105-00	METAL CHIP	220K	5%	1/10W
R112	1-216-105-00	METAL CHIP	220K	5%	1/10W
R113	1-216-109-00	METAL CHIP	330K	5%	1/10W
R114	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R115	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R116	1-216-077-00	METAL CHIP	15K	5%	1/10W
R118	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R119	1-216-107-00	METAL CHIP	270K	5%	1/10W
R120	1-216-295-00	METAL CHIP	0	5%	1/10W
R121	1-216-107-00	METAL CHIP	270K	5%	1/10W
R123	1-216-295-00	METAL CHIP	0	5%	1/10W
R124	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R125	1-216-049-00	METAL CHIP	1K	5%	1/10W
R130	1-216-049-00	METAL CHIP	1K	5%	1/10W

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV101	1-241-764-11	RES, ADJ, CERMET 10K	
RV102	1-241-763-11	RES, ADJ, CERMET 4.7K	
RV103	1-241-763-11	RES, ADJ, CERMET 4.7K	

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IO-50

Ref. No.	Part No.	Description	Remark
*	A-6754-655-A	IO-50 BOARD, COMPLETE (E80UX, UY) **********************	
*	A-6754-659-A	IO-50 BOARD, COMPLETE (E80B, NP) **********************	
*	A-6754-661-A	IO-50 BOARD, COMPLETE (E80AP, IT, NC) **********************	
*	A-6754-663-A	IO-50 BOARD, COMPLETE (E80VP) **********************	

(Ref. NO. 4,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C701	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C702	1-124-126-00	ELECT 47uF 20% 10V	
C703	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C704	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C707	1-124-126-00	ELECT 47uF 20% 10V	
C709	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C751	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C752	1-124-126-00	ELECT 47uF 20% 10V	
C753	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C757	1-124-126-00	ELECT 47uF 20% 10V	
C901	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C902	1-124-477-11	ELECT 47uF 20% 25V	
C903	1-124-126-00	ELECT 47uF 20% 10V	
C904	1-124-472-11	ELECT 470uF 20% 10V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CJ701	1-695-935-11	CONNECTOR (SQUARE TYPE) 21P	(EURO-AV(LINE 1))
CJ702	1-565-319-71	JACK, PIN 2P (AUDIO OUT L/R)	
* CN701	1-691-407-11	CONNECTOR, BOARD TO BOARD 10P	
CN702	1-568-672-11	CONNECTOR, BOARD TO BOARD 12P	
* CN703	1-764-212-11	CONNECTOR, BOARD TO BOARD 13P	
CN704	1-506-468-11	PIN, CONNECTOR 3P	(E80UX, UY)
CN705	1-691-908-21	CONNECTOR, WIRE TRAP 8P	(E80B, NP)
* CN706	1-695-520-11	CONNECTOR, WIRE TRAP 9P	(E80B, NP)
CN708	1-506-468-11	PIN, CONNECTOR 3P	(E80AP, B, IT, NC, NP, UX, UY)
CN708	1-506-469-11	PIN, CONNECTOR 4P	(E80VP)

< DIODE >

Ref. No.	Part No.	Description	Remark
D701	8-719-911-19	DIODE 1SS119	
D702	8-719-911-19	DIODE 1SS119	
D703	8-719-911-19	DIODE 1SS119	(E80B, NP)
D704	8-719-921-86	DIODE MTZJ-13	(E80B, NP)
D901	8-719-109-97	DIODE RD6.8ES-B2	(E80B, NP)
D902	8-719-109-97	DIODE RD6.8ES-B2	(E80B, NP)
D903	8-719-109-97	DIODE RD6.8ES-B2	(E80B, NP)
D904	8-719-109-97	DIODE RD6.8ES-B2	(E80B, NP, UX, UY)
D905	8-719-109-97	DIODE RD6.8ES-B2	
D906	8-719-109-97	DIODE RD6.8ES-B2	
D907	8-719-109-97	DIODE RD6.8ES-B2	
D908	8-719-109-97	DIODE RD6.8ES-B2	(E80B, NP)
D909	8-719-921-86	DIODE MTZJ-13	
D925	8-719-982-09	DIODE MTZJ-4.3	
D951	8-719-108-12	DIODE RD9.1E-W	
D952	8-719-108-12	DIODE RD9.1E-W	
D953	8-719-108-12	DIODE RD9.1E-W	
D954	8-719-108-12	DIODE RD9.1E-W	

< FILTER >

Ref. No.	Part No.	Description	Remark
FL701	1-236-071-11	ENCAPSULATED COMPONENT	(E80VP)
FL702	1-236-071-11	ENCAPSULATED COMPONENT	(E80VP)
FL703	1-236-071-11	ENCAPSULATED COMPONENT	(E80VP)
FL704	1-236-071-11	ENCAPSULATED COMPONENT	(E80VP)
FL705	1-236-071-11	ENCAPSULATED COMPONENT	(E80VP)
FL751	1-236-071-11	ENCAPSULATED COMPONENT	(E80VP)
FL752	1-236-071-11	ENCAPSULATED COMPONENT	(E80VP)
FL753	1-236-071-11	ENCAPSULATED COMPONENT	(E80VP)
FL754	1-236-071-11	ENCAPSULATED COMPONENT	(E80VP)
FL755	1-236-071-11	ENCAPSULATED COMPONENT	(E80VP)

< IC >

Ref. No.	Part No.	Description	Remark
IC701	8-759-009-06	IC MC14052BF	
IC702	8-759-924-46	IC BA4560F	
IC703	8-759-009-06	IC MC14052BF	
IC706	1-809-952-11	IC MODULE, CANAL PLUS BX8179	(E80B, NP)

< JUMPER RESISTOR >

Ref. No.	Part No.	Description	Remark
JR701	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80AP, B, IT, NC, NP, UX, UY)
JR702	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80AP, B, IT, NC, NP, UX, UY)
JR703	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80B, NP)
JR704	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80B, NP)
JR705	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80AP, B, IT, NC, NP, UX, UY)
JR706	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR707	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR713	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80AP, IT, NC, UX, UY, VP)
JR714	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR715	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80B, NP)
JR717	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80B, NP)
JR718	1-216-296-00	METAL CHIP 0 5% 1/8W	

Ref. No.	Part No.	Description	Remark
JR719	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80B, NP)
JR720	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR721	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR722	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR751	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80AP, B, IT, NC, NP, UX, UY)
JR752	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80AP, B, IT, NC, NP, UX, UY)
JR753	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80B, NP)
JR754	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80B, NP)
JR755	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80AP, B, IT, NC, NP, UX, UY)
JR756	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80AP, IT, NC, UX, UY, VP)
JR763	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80VP)
JR764	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80B, NP)
JR765	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80B, NP)
JR902	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80AP, IT, NC, UX, UY, VP)
		< COIL >	
L701	1-408-421-00	INDUCTOR 100uH	
L702	1-408-421-00	INDUCTOR 100uH	
L703	1-408-421-00	INDUCTOR 100uH	
		< TRANSISTOR >	
Q703	8-729-424-56	TRANSISTOR UN211L	
Q704	8-729-421-19	TRANSISTOR UN2213	
Q901	8-729-216-22	TRANSISTOR 2SA1162-G	
Q902	8-729-216-22	TRANSISTOR 2SA1162-G	(E80B, NP)
Q959	8-729-422-27	TRANSISTOR 2SD601A-Q	(E80B, NP)
		< RESISTOR >	
R701	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R702	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R703	1-249-433-11	CARBON 22K 5% 1/4W	
R704	1-249-435-11	CARBON 33K 5% 1/4W	
R705	1-216-081-00	METAL CHIP 22K 5% 1/10W	(E80UX, UY)
R706	1-216-085-00	METAL CHIP 33K 5% 1/10W	(E80UX, UY)
R707	1-216-081-00	METAL CHIP 22K 5% 1/10W	(E80AP, IT, NC, UX, UY, VP)
R707	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(E80B, NP)
R708	1-216-083-00	METAL CHIP 27K 5% 1/10W	(E80AP, IT, NC, UX, UY, VP)
R708	1-216-091-00	METAL CHIP 56K 5% 1/10W	(E80B, NP)
R715	1-216-041-00	METAL CHIP 470 5% 1/10W	
R719	1-216-041-00	METAL CHIP 470 5% 1/10W	(E80B, NP)
R720	1-249-426-11	CARBON 5.6K 5% 1/4W	
R721	1-216-075-00	METAL CHIP 12K 5% 1/10W	(E80B, NP)
R722	1-216-075-00	METAL CHIP 12K 5% 1/10W	(E80B, NP)

Ref. No.	Part No.	Description	Remark
R723	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R724	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R725	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R726	1-216-043-00	METAL CHIP 560 5% 1/10W	
R728	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R729	1-216-043-00	METAL CHIP 560 5% 1/10W	(E80B, NP)
R751	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R752	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R753	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R754	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R755	1-216-081-00	METAL CHIP 22K 5% 1/10W	(E80UX, UY)
R756	1-216-085-00	METAL CHIP 33K 5% 1/10W	(E80UX, UY)
R757	1-216-081-00	METAL CHIP 22K 5% 1/10W	(E80AP, IT, NC, UX, UY, VP)
R757	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(E80B, NP)
R758	1-216-083-00	METAL CHIP 27K 5% 1/10W	(E80AP, IT, NC, UX, UY, VP)
R758	1-216-091-00	METAL CHIP 56K 5% 1/10W	(E80B, NP)
R765	1-216-041-00	METAL CHIP 470 5% 1/10W	
R769	1-216-041-00	METAL CHIP 470 5% 1/10W	(E80B, NP)
R770	1-249-426-11	CARBON 5.6K 5% 1/4W	
R776	1-216-043-00	METAL CHIP 560 5% 1/10W	
R778	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R779	1-216-043-00	METAL CHIP 560 5% 1/10W	(E80B, NP)
R901	1-216-037-00	METAL CHIP 330 5% 1/10W	
R903	1-216-031-00	METAL CHIP 180 5% 1/10W	
R904	1-216-029-00	METAL CHIP 150 5% 1/10W	
R905	1-216-021-00	METAL CHIP 68 5% 1/10W	
R906	1-216-022-00	METAL CHIP 75 5% 1/10W	(E80B, NP)
R907	1-249-417-11	CARBON 1K 5% 1/4W F	(E80B, NP)
R908	1-216-022-00	METAL CHIP 75 5% 1/10W	(E80B, NC, NP)
R909	1-216-049-00	METAL CHIP 1K 5% 1/10W	(E80B, NP)
R957	1-247-807-31	CARBON 100 5% 1/4W	(E80B, NP)
R958	1-247-807-31	CARBON 100 5% 1/4W	(E80B, NP)
R959	1-247-807-31	CARBON 100 5% 1/4W	(E80B, NP)

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* A-6782-270-A MA-181 BOARD, COMPLETE (E80UX, UY)

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* A-6782-271-A MA-181 BOARD, COMPLETE (E80NP)

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* A-6782-274-A MA-181 BOARD, COMPLETE (E80B)

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* A-6782-276-A MA-181 BOARD, COMPLETE (E80AP, IT, NC, VP)

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(Ref. NO. 2,000 Series)

MA-181

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C001	1-161-494-00	CERAMIC	0.022uF		25V
C002	1-161-494-00	CERAMIC	0.022uF		25V
C003	1-124-261-00	ELECT	10uF	20%	50V
C004	1-162-306-11	CERAMIC	0.01uF	20%	16V
C006	1-124-589-11	ELECT	47uF	20%	16V
C008	1-164-159-11	CERAMIC	0.1uF		50V
C009	1-164-159-11	CERAMIC	0.1uF		50V
C022	1-162-306-11	CERAMIC	0.01uF	20%	16V
C025	1-162-294-31	CERAMIC	0.001uF	10%	50V
C026	1-162-294-31	CERAMIC	0.001uF	10%	50V
C101	1-162-306-11	CERAMIC	0.01uF	20%	16V
C102	1-124-126-00	ELECT	47uF	20%	10V
C103	1-162-849-11	CERAMIC	0.068uF	10%	16V
C104	1-126-233-11	ELECT	22uF	20%	50V
C105	1-124-443-00	ELECT	100uF	20%	10V
C106	1-162-294-31	CERAMIC	0.001uF	10%	50V
C107	1-162-835-11	CERAMIC	0.0047uF	10%	16V
C108	1-164-159-11	CERAMIC	0.1uF		50V
C109	1-124-925-11	ELECT	2.2uF	20%	100V
C201	1-162-306-11	CERAMIC	0.01uF	20%	16V
C202	1-124-589-11	ELECT	47uF	20%	16V (E80B, UX, UY)
C202	1-124-261-00	ELECT	10uF	20%	50V (E80AP, IT, NC, NP, VP)
C203	1-126-101-11	ELECT	100uF	20%	16V
C204	1-137-399-11	FILM	0.1uF	5%	50V
C205	1-162-306-11	CERAMIC	0.01uF	20%	16V
C206	1-126-233-11	ELECT	22uF	20%	50V
C207	1-137-372-11	FILM	0.022uF	5%	50V
C210	1-126-176-11	ELECT	220uF	20%	10V
C211	1-162-205-31	CERAMIC	18PF	5%	50V
C212	1-162-205-31	CERAMIC	18PF	5%	50V
C213	1-164-159-11	CERAMIC	0.1uF		50V
C214	1-162-294-31	CERAMIC	0.001uF	10%	50V
C215	1-161-057-00	CERAMIC	0.033uF	10%	50V
C216	1-164-159-11	CERAMIC	0.1uF		50V
C299	1-162-282-31	CERAMIC	100PF	10%	50V
C351	1-124-907-11	ELECT	10uF	20%	50V
C352	1-124-907-11	ELECT	10uF	20%	50V
C353	1-124-261-00	ELECT	10uF	20%	50V (E80UX, UY)
C354	1-164-159-11	CERAMIC	0.1uF		50V (E80UX, UY)
C355	1-124-261-00	ELECT	10uF	20%	50V (E80UX, UY)
C356	1-124-261-00	ELECT	10uF	20%	50V
C361	1-162-282-31	CERAMIC	100PF	10%	50V
C362	1-162-282-31	CERAMIC	100PF	10%	50V
C364	1-162-306-11	CERAMIC	0.01uF	20%	16V (E80UX, UY)
C366	1-162-282-31	CERAMIC	100PF	10%	50V
C401	1-164-084-11	CERAMIC	820PF	10%	50V
C402	1-164-092-11	CERAMIC	0.0033uF	10%	25V
C403	1-124-902-00	ELECT	0.47uF	20%	50V
C404	1-124-907-11	ELECT	10uF	20%	50V
C405	1-137-370-11	FILM	0.01uF	5%	50V
C406	1-164-159-11	CERAMIC	0.1uF		50V
C407	1-124-903-11	ELECT	1uF	20%	50V
C409	1-164-159-11	CERAMIC	0.1uF		50V
C410	1-124-907-11	ELECT	10uF	20%	50V
C411	1-124-252-00	ELECT	0.33uF	20%	50V
C414	1-130-488-00	MYLAR	0.027uF	5%	50V
C415	1-124-903-11	ELECT	1uF	20%	50V
C416	1-130-486-00	MYLAR	0.018uF	10%	50V
C417	1-124-034-51	ELECT	33uF	20%	16V
C418	1-124-034-51	ELECT	33uF	20%	16V
C421	1-162-290-31	CERAMIC	470PF	10%	50V
C852	1-162-306-11	CERAMIC	0.01uF	20%	16V
C853	1-162-306-11	CERAMIC	0.01uF	20%	16V
C854	1-164-087-11	CERAMIC	0.0015uF	10%	50V
C855	1-164-087-11	CERAMIC	0.0015uF	10%	50V
C856	1-137-612-11	FILM	0.0068uF	5%	100V
C857	1-104-697-11	FILM	0.047uF	5%	100V
C858	1-104-695-11	FILM	330PF	5%	100V
C859	1-126-101-11	ELECT	100uF	20%	16V
C860	1-126-101-11	ELECT	100uF	20%	16V

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN002	1-569-335-11	CONNECTOR, BOARD TO BOARD 9P	
CN003	1-691-643-11	CONNECTOR, BOARD TO BOARD	
CN005	1-506-468-11	PIN, CONNECTOR 3P	
CN006	1-569-333-11	CONNECTOR, BOARD TO BOARD 3P	
CN101	1-506-468-11	PIN, CONNECTOR 3P	
CN201	1-573-842-11	CONNECTOR, BOARD TO BOARD 10P	
CN301	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	
CN302	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	
CN303	1-573-846-11	CONNECTOR, BOARD TO BOARD 14P	
CN304	1-573-852-11	CONNECTOR, BOARD TO BOARD 20P	
* CN307	1-560-891-00	PIN, CONNECTOR 3P	(E80UX, UY)
CN402	1-695-821-11	CONNECTOR, BOARD TO BOARD 12P	
* CN405	1-573-843-11	CONNECTOR, BOARD TO BOARD 11P	
* CN406	1-573-843-11	CONNECTOR, BOARD TO BOARD 11P	
* CN801	1-691-409-11	CONNECTOR, BOARD TO BOARD 10P	
* CN802	1-764-210-11	CONNECTOR, BOARD TO BOARD 12P	
* CN803	1-764-211-11	CONNECTOR, BOARD TO BOARD 13P	
CN854	1-506-469-11	PIN, CONNECTOR 4P	

Ref. No.	Part No.	Description	Remark
CN855	1-506-468-11	PIN, CONNECTOR 3P	
* CN857	1-560-891-00	PIN, CONNECTOR 3P	
		< DIODE >	
D001	8-719-985-00	DIODE GL451VS1	
D004	8-719-109-93	DIODE RD6. 2ES-B2	
D005	8-719-109-93	DIODE RD6. 2ES-B2	
D006	8-719-109-93	DIODE RD6. 2ES-B2	
D007	8-719-109-93	DIODE RD6. 2ES-B2	
D201	8-719-911-19	DIODE 1SS119	
D202	8-719-109-74	DIODE RD4. 3ES-B1	
D203	8-719-109-81	DIODE RD4. 7ES-B2	
D204	8-719-200-82	DIODE 11ES2	
D206	8-719-911-19	DIODE 1SS119	
D301	8-719-911-19	DIODE 1SS119 (E80B)	
D302	8-719-911-19	DIODE 1SS119 (E80B)	
D351	8-719-911-19	DIODE 1SS119 (E80UX, UY)	
D352	8-719-911-19	DIODE 1SS119 (E80UX, UY)	
D353	8-719-911-19	DIODE 1SS119	
D401	8-719-911-19	DIODE 1SS119	
D402	1-249-417-11	CARBON 1K 5% 1/4W	F
D403	8-719-911-19	DIODE 1SS119	
		< IC >	
IC002	8-759-912-77	IC uPC324C	
IC101	8-759-246-14	IC TA8823N	
⚠IC201	8-759-983-45	IC BA6238A	
IC202	8-759-503-91	IC TL082ACP	
IC203	8-752-848-85	IC CXP80732-011Q	
IC303	8-759-198-39	IC HD49783	
IC305	8-759-927-56	IC BA7021	
IC306	8-759-710-40	IC NJM2234D (E80UX, UY)	
IC401	8-759-089-82	IC BA7790LS	
		< COIL >	
L101	1-414-189-31	INDUCTOR 100uH	
L201	1-414-185-41	INDUCTOR 22uH	
L202	1-414-183-41	INDUCTOR 10uH	
L351	1-410-509-11	INDUCTOR 10uH (E80UX, UY)	
L352	1-410-509-11	INDUCTOR 10uH	
L401	1-410-071-11	INDUCTOR 10mH	
L402	1-414-183-41	INDUCTOR 10uH	
L852	1-410-687-11	INDUCTOR 1. 2mH	
L853	1-410-687-11	INDUCTOR 1. 2mH	
		< PHOTO INTERRUPTER >	
PH001	8-759-144-33	IC PS6002	
PH002	8-759-144-33	IC PS6002	

Ref. No.	Part No.	Description	Remark
		< IC LINK >	
PS201	1-532-685-00	LINK, IC	
PS851	1-532-679-00	LINK, IC	
		< TRANSISTOR >	
Q001	8-729-926-31	TRANSISTOR PT483F1S	
Q002	8-729-926-31	TRANSISTOR PT483F1S	
Q201	8-729-422-71	TRANSISTOR UN411L	
Q301	8-729-900-89	TRANSISTOR DTC144ES (E80B)	
Q302	8-729-900-65	TRANSISTOR DTA144ES	
Q306	8-729-900-65	TRANSISTOR DTA144ES	
Q851	8-729-012-31	TRANSISTOR 2SC4040-TL2-Q	
Q852	8-729-012-31	TRANSISTOR 2SC4040-TL2-Q	
Q853	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q854	8-729-422-57	TRANSISTOR UN4111	
Q855	8-729-900-65	TRANSISTOR DTA144ES	
		< RESISTOR >	
R001	1-249-423-11	CARBON 3. 3K 5% 1/4W	F
R002	1-249-423-11	CARBON 3. 3K 5% 1/4W	F
R003	1-249-426-11	CARBON 5. 6K 5% 1/4W	
R004	1-249-426-11	CARBON 5. 6K 5% 1/4W	
R005	1-249-415-11	CARBON 680 5% 1/4W	F
R006	1-249-441-11	CARBON 100K 5% 1/4W	
R007	1-249-441-11	CARBON 100K 5% 1/4W	
R008	1-249-425-11	CARBON 4. 7K 5% 1/4W	F
R009	1-249-408-11	CARBON 180 5% 1/4W	F
R010	1-249-422-11	CARBON 2. 7K 5% 1/4W	F
R011	1-249-437-11	CARBON 47K 5% 1/4W	
R012	1-249-421-11	CARBON 2. 2K 5% 1/4W	F
R015	1-249-437-11	CARBON 47K 5% 1/4W	
R016	1-249-421-11	CARBON 2. 2K 5% 1/4W	F
R017	1-249-429-11	CARBON 10K 5% 1/4W	
R018	1-249-429-11	CARBON 10K 5% 1/4W	
R019	1-249-429-11	CARBON 10K 5% 1/4W	
R020	1-249-429-11	CARBON 10K 5% 1/4W	
R023	1-249-414-11	CARBON 560 5% 1/4W	F
R024	1-249-437-11	CARBON 47K 5% 1/4W	
R025	1-249-437-11	CARBON 47K 5% 1/4W	
R101	1-247-901-11	CARBON 820K 5% 1/4W	
R102	1-249-439-11	CARBON 68K 5% 1/4W	
R103	1-249-441-11	CARBON 100K 5% 1/4W	
R104	1-249-441-11	CARBON 100K 5% 1/4W	
R105	1-249-435-11	CARBON 33K 5% 1/4W	
R106	1-249-425-11	CARBON 4. 7K 5% 1/4W	F
R107	1-249-411-11	CARBON 330 5% 1/4W	
R108	1-247-807-31	CARBON 100 5% 1/4W	
R109	1-215-429-00	METAL 2. 2K 1% 1/6W	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

MA-181

Ref. No.	Part No.	Description	Remark
R110	1-249-417-11	CARBON 1K 5% 1/4W	F
R126	1-215-429-00	METAL 2.2K 1% 1/6W	
R203	1-249-429-11	CARBON 10K 5% 1/4W	
R204	1-249-429-11	CARBON 10K 5% 1/4W	
R205	1-249-429-11	CARBON 10K 5% 1/4W	
R206	1-249-436-11	CARBON 39K 5% 1/4W	
R208	1-249-417-11	CARBON 1K 5% 1/4W	F
R209	1-247-874-11	CARBON 62K 5% 1/4W	
R210	1-249-431-11	CARBON 15K 5% 1/4W	
R211	1-249-422-11	CARBON 2.7K 5% 1/4W	F
R212	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R213	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R214	1-247-885-00	CARBON 180K 5% 1/4W	
R216	1-249-417-11	CARBON 1K 5% 1/4W	F
R217	1-249-433-11	CARBON 22K 5% 1/4W	
R218	1-249-436-11	CARBON 39K 5% 1/4W	
R219	1-249-433-11	CARBON 22K 5% 1/4W	
R220	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R222	1-249-422-11	CARBON 2.7K 5% 1/4W	F
R224	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R225	1-249-437-11	CARBON 47K 5% 1/4W	
R226	1-249-437-11	CARBON 47K 5% 1/4W	
R301	1-249-429-11	CARBON 10K 5% 1/4W	(E80B)
R311	1-249-429-11	CARBON 10K 5% 1/4W	
R351	1-249-429-11	CARBON 10K 5% 1/4W	(E80UX, UY)
R355	1-249-429-11	CARBON 10K 5% 1/4W	
R356	1-249-429-11	CARBON 10K 5% 1/4W	
R359	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R362	1-249-417-11	CARBON 1K 5% 1/4W	F
R363	1-249-417-11	CARBON 1K 5% 1/4W	F
R364	1-249-434-11	CARBON 27K 5% 1/4W	
R365	1-249-427-11	CARBON 6.8K 5% 1/4W	F
R366	1-249-427-11	CARBON 6.8K 5% 1/4W	F
R367	1-249-427-11	CARBON 6.8K 5% 1/4W	F
R368	1-249-427-11	CARBON 6.8K 5% 1/4W	F
R369	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R370	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R371	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R372	1-249-427-11	CARBON 6.8K 5% 1/4W	F
R373	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R374	1-249-424-11	CARBON 3.9K 5% 1/4W	F
R375	1-249-401-11	CARBON 47 5% 1/4W	F
R376	1-249-401-11	CARBON 47 5% 1/4W	F
R377	1-249-401-11	CARBON 47 5% 1/4W	F (E80UX, UY)
R378	1-247-807-31	CARBON 100 5% 1/4W	(E80UX, UY)
R401	1-249-441-11	CARBON 100K 5% 1/4W	
R402	1-249-438-11	CARBON 56K 5% 1/4W	
R403	1-249-409-11	CARBON 220 5% 1/4W	F
R404	1-247-891-00	CARBON 330K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R405	1-249-430-11	CARBON 12K 5% 1/4W	
R406	1-249-426-11	CARBON 5.6K 5% 1/4W	
R407	1-249-435-11	CARBON 33K 5% 1/4W	
R408	1-249-432-11	CARBON 18K 5% 1/4W	
R409	1-259-880-11	CARBON 2.2M 5% 1/4W	
R410	1-249-429-11	CARBON 10K 5% 1/4W	
R411	1-249-435-11	CARBON 33K 5% 1/4W	
R418	1-249-417-11	CARBON 1K 5% 1/4W	F
R419	1-247-864-11	CARBON 24K 5% 1/4W	
R420	1-249-410-11	CARBON 270 5% 1/4W	F
R421	1-249-417-11	CARBON 1K 5% 1/4W	F
R422	1-249-426-11	CARBON 5.6K 5% 1/4W	
R423	1-249-437-11	CARBON 47K 5% 1/4W	
R424	1-249-434-11	CARBON 27K 5% 1/4W	
R425	1-249-441-11	CARBON 100K 5% 1/4W	
R426	1-249-434-11	CARBON 27K 5% 1/4W	
R854	1-215-439-00	METAL 5.6K 1% 1/6W	
R855	1-215-423-00	METAL 1.2K 1% 1/6W	
R858	1-249-437-11	CARBON 47K 5% 1/4W	
R859	1-249-429-11	CARBON 10K 5% 1/4W	
R860	1-249-435-11	CARBON 33K 5% 1/4W	
R861	1-249-440-11	CARBON 82K 5% 1/4W	
R866	1-249-393-11	CARBON 10 5% 1/4W	F
R868	1-249-433-11	CARBON 22K 5% 1/4W	
R869	1-249-395-11	CARBON 15 5% 1/4W	F
R870	1-249-434-11	CARBON 27K 5% 1/4W	
R871	1-249-394-11	CARBON 12 5% 1/6W	F
R898	1-249-417-11	CARBON 1K 5% 1/4W	F
R899	1-249-417-11	CARBON 1K 5% 1/4W	F

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV201	1-238-019-11	RES, ADJ, CARBON 47K	
RV202	1-238-019-11	RES, ADJ, CARBON 47K	
RV851	1-241-767-21	RES, ADJ, CARBON 100K	

< SWITCH >

Ref. No.	Part No.	Description	Remark
S001	1-570-953-11	SWITCH, PUSH (1 KEY)	
S002	1-570-953-11	SWITCH, PUSH (1 KEY)	

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
T851	1-423-413-11	TRANSFORMER, BIAS OSCILLATION	
T852	1-423-415-11	TRANSFORMER, BIAS OSCILLATION	

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X201	1-578-774-11	VIBRATOR, CRYSTAL (12MHz)	

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Ref. No.	Part No.	Description	Remark
*	A-6721-591-A	MF-242 BOARD, COMPLETE (E80B) ***********************	
*	A-6721-593-A	MF-242 BOARD, COMPLETE *********************** (E80AP, IT, NC, NP, UX, UY, VP) (Ref. NO. 5,000 Series)	
*	3-957-314-11	HOLDER, LCD	
	3-957-327-01	RIVET, PUSH	
	3-957-338-01	ILLUMINATOR	
	3-697-607-01	HOLDER, LED	
		< CAPACITOR >	
C301	1-126-157-11	ELECT 10uF 20% 16V	
C302	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C303	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C304	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C305	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C306	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C320	1-126-176-11	ELECT 220uF 20% 10V	
		< CONNECTOR >	
* CN301	1-750-192-21	CONNECTOR, BOARD TO BOARD 22P	
* CN303	1-695-329-31	PIN, CONNECTOR (PC BOARD) 6P	
* CN304	1-564-014-51	PIN, CONNECTOR 4P	
		< DIODE >	
D301	8-719-940-XX	DIODE SLR-34VCA49 (REC)	
D302	8-719-940-XX	DIODE SLR-34VCA49 (TIMER)	
D303	8-719-946-30	LED SLR34DC3 (PAUSE)	
D304	8-719-812-32	LED TLY123 (HI-SPEED REWIND)	
D305	8-719-801-78	DIODE 1SS184	
D306	8-719-109-97	DIODE RD6.8ES-B2	
D307	8-719-109-97	DIODE RD6.8ES-B2	
D308	8-719-109-97	DIODE RD6.8ES-B2	
D309	8-719-109-97	DIODE RD6.8ES-B2	
D310	8-719-109-97	DIODE RD6.8ES-B2	
		< IC >	
IC301	8-759-249-78	IC LC75850E	
		< JUMPER RESISTOR >	
JR302	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR303	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L301	1-408-401-00	INDUCTOR 2.2uH	
L302	1-410-509-11	INDUCTOR 10uH	

Ref. No.	Part No.	Description	Remark
		< CRYSTAL LIQUID >	
LC301	1-810-354-11	DISPLAY PANEL, LIQUID CRYSTAL (EXCEPT E80B)	
LC301	1-810-355-11	DISPLAY PANEL, LIQUID CRYSTAL (E80B)	
		< TRANSISTOR >	
Q301	8-729-421-19	TRANSISTOR UN2213	
Q302	8-729-421-19	TRANSISTOR UN2213	
Q303	8-729-421-19	TRANSISTOR UN2213	
Q304	8-729-421-19	TRANSISTOR UN2213	
Q305	8-729-421-19	TRANSISTOR UN2213	
Q307	8-729-216-22	TRANSISTOR 2SA1162	
		< RESISTOR >	
R301	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R302	1-249-429-11	CARBON 10K 5% 1/4W	
R303	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R304	1-216-035-00	METAL CHIP 270 5% 1/10W	
R305	1-216-035-00	METAL CHIP 270 5% 1/10W	
R306	1-216-037-00	METAL CHIP 330 5% 1/10W	
R307	1-249-408-11	CARBON 180 5% 1/4W	F
R308	1-216-031-00	METAL CHIP 180 5% 1/10W	
R309	1-216-031-00	METAL CHIP 180 5% 1/10W	
R310	1-216-031-00	METAL CHIP 180 5% 1/10W	
R311	1-216-031-00	METAL CHIP 180 5% 1/10W	
R312	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R313	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R317	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R318	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R319	1-216-013-00	METAL CHIP 33 5% 1/10W	
R320	1-216-013-00	METAL CHIP 33 5% 1/10W	
R321	1-216-262-00	METAL GLAZE 470K 5% 1/8W	
R322	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R323	1-216-262-00	METAL GLAZE 470K 5% 1/8W	
R324	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R325	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
		< SWITCH >	
S301	1-571-977-11	SWITCH, TACTIL (PAUSE)	
S302	1-571-977-11	SWITCH, TACTIL (HI-SPEED REWIND)	
S303	1-692-726-11	SWITCH, ROTARY (LED) (PLAY/STOP/REW/FF)	

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Ref. No.	Part No.	Description	Remark
*	A-6720-592-A	MF-243 BOARD, COMPLETE	
		***********************	
			(E80AP, B, IT, NC, NP, UX, UY)
*	A-6720-596-A	MF-243 BOARD, COMPLETE (E80VP)	
		***********************	
			(Ref. NO. 5, 000 Series)
		< CAPACITOR >	
C602	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(E80VP)
C604	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(E80VP)
C605	1-163-031-11	CERAMIC CHIP 0. 01uF 50V	
C610	1-163-009-11	CERAMIC CHIP 0. 001uF 10% 50V	(E80VP)
		< CONNECTOR >	
CN601	1-695÷820-11	CONNECTOR, BOARD TO BOARD 12P	
		< DIODE >	
D601	8-719-970-67	DIODE SLR-34MCA49	
D602	8-719-970-67	DIODE SLR-34MCA49	
D603	8-719-940-99	LED SLR34VC3	
D606	8-719-108-12	DIODE RD9. 1E-W	
D607	8-719-108-12	DIODE RD9. 1E-W	
D608	8-719-108-12	DIODE RD9. 1E-W	
D610	8-719-109-93	DIODE RD6. 2ES-B2	
		< IC >	
IC601	1-466-833-11	IC RAY-CATCHER BLOCK, REMOCON	
		< COIL >	
L601	1-410-521-11	INDUCTOR 100uH	(E80VP)
L602	1-410-521-11	INDUCTOR 100uH	(E80VP)
		< JACK >	
PJ601	1-695-865-11	JACK, PIN 3P (LINE IN 2)	
		< TRANSISTOR >	
Q601	8-729-421-19	TRANSISTOR UN2213	
Q602	8-729-216-22	TRANSISTOR 2SA1162-G	
		< RESISTOR >	
R601	1-216-238-91	METAL GLAZE 47K 5% 1/8W	
R602	1-216-022-00	METAL CHIP 75 5% 1/10W	
R603	1-216-041-00	METAL CHIP 470 5% 1/10W	(E80VP)
R603	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80AP, B, IT, NC, NP, UX, UY)
R604	1-216-041-00	METAL CHIP 470 5% 1/10W	(E80VP)
R604	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80AP, B, IT, NC, NP, UX, UY)
R605	1-216-170-00	METAL GLAZE 68 5% 1/8W	
R606	1-216-180-00	METAL GLAZE 180 5% 1/8W	
R607	1-216-057-00	METAL CHIP 2. 2K 5% 1/10W	
		< SWITCH >	
S601	1-571-977-11	SWITCH, TACTIL (POWER)	
S602	1-571-977-11	SWITCH, TACTIL (EJECT)	

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Ref. No.	Part No.	Description	Remark
*	A-6781-279-A	PD-37 BOARD, COMPLETE (E80AP)	
		**********************	
*	A-6781-309-A	PD-37 BOARD, COMPLETE (E80UY)	
		**********************	
			(Ref. NO. 9, 000 Series)
		< CAPACITOR >	
C003	1-163-038-00	CERAMIC CHIP 0. 1uF 25V	
C004	1-124-589-11	ELECT 47uF 20% 16V	
C005	1-163-227-11	CERAMIC CHIP 10PF 0. 5PF 50V	(E80AP)
C006	1-163-227-11	CERAMIC CHIP 10PF 0. 5PF 50V	(E80AP)
C007	1-163-038-00	CERAMIC CHIP 0. 1uF 25V	(E80AP)
C008	1-124-589-11	ELECT 47uF 20% 16V	(E80AP)
C009	1-164-232-11	CERAMIC CHIP 0. 01uF 50V	(E80AP)
C010	1-164-232-11	CERAMIC CHIP 0. 01uF 50V	(E80AP)
C011	1-164-232-11	CERAMIC CHIP 0. 01uF 50V	(E80AP)
C012	1-126-301-11	ELECT 1uF 20% 50V	(E80AP)
C014	1-163-038-00	CERAMIC CHIP 0. 1uF 25V	(E80AP)
		< CONNECTOR >	
* CN001	1-565-438-11	SOCKET, CONNECTOR (PCB) 10P	
		< DIODE >	
D001	8-719-801-48	DIODE 1SS193	(E80AP)
D002	8-719-801-48	DIODE 1SS193	(E80AP)
D003	8-719-911-19	DIODE 1SS119	(E80AP)
		< IC >	
IC001	8-752-845-47	IC CXP80316-025Q	
IC002	8-759-168-94	IC MV1820E-CG-MPEE	(E80AP)
IC003	8-759-504-44	IC MM1031XMR	(E80AP)
		< JUMPER RESISTOR >	
JR001	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR002	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80AP)

Ref. No.	Part No.	Description	Remark
		< COIL >	
L001	1-410-521-11	INDUCTOR 100uH	
L002	1-410-509-11	INDUCTOR 10uH (E80AP)	
		< RESISTOR >	
R001	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R002	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R003	1-216-073-00	METAL CHIP 10K 5% 1/10W	(E80AP)
R004	1-216-073-00	METAL CHIP 10K 5% 1/10W	(E80AP)
R005	1-216-073-00	METAL CHIP 10K 5% 1/10W	(E80AP)
		< VIBRATOR >	
X001	1-579-125-11	VIBRATOR, CERAMIC (8MHz)	
X002	1-579-971-11	VIBRATOR, CRYSTAL (27.75MHz)(E80AP)	

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* A-6720-579-A PL-24 BOARD, COMPLETE
****
(Ref. NO. 5,000 Series)

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN601	1-506-469-11	PIN, CONNECTOR 4P	
		< DIODE >	
D601	8-719-047-06	DIODE SEL3713K-TP5 (LCD BACK LIGHT)	
D602	8-719-047-06	DIODE SEL3713K-TP5 (LCD BACK LIGHT)	
D603	8-719-047-06	DIODE SEL3713K-TP5 (LCD BACK LIGHT)	
D604	8-719-047-06	DIODE SEL3713K-TP5 (LCD BACK LIGHT)	
		< PILOT LAMP >	
PL601	1-517-254-11	LAMP, PILOT (LCD BACK LIGHT)	
PL602	1-517-254-11	LAMP, PILOT (LCD BACK LIGHT)	
PL603	1-517-254-11	LAMP, PILOT (LCD BACK LIGHT)	

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⚠* A-6727-538-A PT-96 BOARD, COMPLETE (E80NP)
****

⚠* A-6727-537-A PT-96 BOARD, COMPLETE (E80UX, UY)
****

⚠* A-6727-541-A PT-96 BOARD, COMPLETE (E80B)
****

⚠* A-6727-544-A PT-96 BOARD, COMPLETE (E80AP)
****

⚠* A-6727-546-A PT-96 BOARD, COMPLETE (E80VP)
****

⚠* A-6727-547-A PT-96 BOARD, COMPLETE (E80NC)
****

⚠* A-6727-549-A PT-96 BOARD, COMPLETE (E80IT)
****
(Ref. NO. 3,000 Series)

Ref. No.	Part No.	Description	Remark
	1-558-924-21	CABLE, PIN (E80AP, B, IT, VP)	
	3-951-893-01	HEAT SINK	
	7-685-646-81	SCREW +BVTP 3X8 TYPE2	
		< BUZZER >	
BZ401	1-529-080-11	BUZZER, PIEZOELECTRIC	
		< CAPACITOR >	
⚠C101	1-104-706-11	FILM 0.22uF 20% 250V	
⚠C102	1-104-705-11	FILM 0.1uF 20% 250V	
⚠C103	1-107-405-11	ELECT 68uF 20% 400V	
⚠C104	1-161-741-00	CERAMIC 0.001uF 10% 400V	
⚠C105	1-161-741-00	CERAMIC 0.001uF 10% 400V	
⚠C106	1-161-741-00	CERAMIC 0.001uF 10% 400V	
⚠C107	1-161-741-00	CERAMIC 0.001uF 10% 400V	
⚠C108	1-161-741-00	CERAMIC 0.001uF 10% 400V	
C121	1-126-103-11	ELECT 470uF 20% 16V	
C122	1-124-471-00	ELECT 1000uF 20% 6.3V	
C125	1-126-233-11	ELECT 22uF 20% 50V	
C131	1-124-120-11	ELECT 220uF 20% 25V	
C132	1-126-233-11	ELECT 22uF 20% 50V	
C141	1-124-477-11	ELECT 47uF 20% 25V	
C142	1-126-101-11	ELECT 100uF 20% 16V	
C152	1-124-443-00	ELECT 100uF 20% 10V	
C161	1-124-126-00	ELECT 47uF 20% 10V	
C162	1-124-442-00	ELECT 330uF 20% 6.3V	
C171	1-124-442-00	ELECT 330uF 20% 6.3V	
C181	1-124-589-11	ELECT 47uF 20% 16V	
C182	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C183	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C184	1-126-157-11	ELECT 10uF 20% 16V	
C185	1-124-261-00	ELECT 10uF 20% 50V	
C186	1-124-261-00	ELECT 10uF 20% 50V	
C187	1-124-261-00	ELECT 10uF 20% 50V	
C189	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C190	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C195	1-124-589-11	ELECT 47uF 20% 16V	
C196	1-124-589-11	ELECT 47uF 20% 16V	
C197	1-124-589-11	ELECT 47uF 20% 16V	
C404	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C405	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C406	1-125-705-11	CAP, DOUBLE LAYERS 0.22F	
C407	1-165-319-11	CERAMIC CHIP 0.1uF 50V	
C408	1-124-442-00	ELECT 330uF 20% 6.3V	
C409	1-165-319-11	CERAMIC CHIP 0.1uF 50V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
C410	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C411	1-163-234-11	CERAMIC CHIP	20PF	5%	50V
C412	1-163-213-00	CERAMIC CHIP	0.0022uF	5%	50V
C413	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C414	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C415	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C451	1-124-443-00	ELECT	100uF	20%	10V
C452	1-124-584-00	ELECT	100uF	20%	10V
C804	1-126-233-11	ELECT	22uF	20%	50V (E80AP, B, IT, VP)
C808	1-163-031-11	CERAMIC CHIP	0.01uF		50V (E80AP, B, IT, VP)
C809	1-126-101-11	ELECT	100uF	20%	16V (E80AP, B, IT, VP)
C810	1-163-031-11	CERAMIC CHIP	0.01uF		50V (E80AP, B, IT, VP)
C811	1-124-927-11	ELECT	4.7uF	20%	100V (E80AP, B, IT, VP)
C812	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V (E80AP, B, IT, VP)
C813	1-163-031-11	CERAMIC CHIP	0.01uF		50V (E80AP, B, IT, VP)
C814	1-124-126-00	ELECT	47uF	20%	10V (E80AP, B, IT, VP)
C817	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V (E80AP, B, IT, VP)
C818	1-165-319-11	CERAMIC CHIP	0.1uF		50V (E80B)
C819	1-163-031-11	CERAMIC CHIP	0.01uF		50V (E80AP, B, IT, VP)
C820	1-124-126-00	ELECT	47uF	20%	10V (E80AP, B, IT, VP)
C824	1-124-907-11	ELECT	10uF	20%	50V (E80AP, IT, VP)
C825	1-124-907-11	ELECT	10uF	20%	50V (E80AP, IT, VP)
C826	1-124-907-11	ELECT	10uF	20%	50V (E80AP, B, IT, VP)
C863	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C865	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C871	1-126-101-11	ELECT	100uF	20%	16V (E80AP, IT, VP)
C872	1-163-031-11	CERAMIC CHIP	0.01uF		50V (E80AP, IT, VP)
C873	1-130-483-00	MYLAR	0.01uF	5%	50V (E80AP, IT, VP)
C874	1-124-907-11	ELECT	10uF	20%	50V (E80AP, IT, VP)
C875	1-124-907-11	ELECT	10uF	20%	50V (E80AP, IT, VP)

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
⚠CJ101	1-251-134-11	INLET, AC (NONPOLAR)	
CN401	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
CN402	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
* CN403	1-750-201-21	CONNECTOR, BOARD TO BOARD 22P	
* CN404	1-565-439-11	PIN, CONNECTOR (PCB) 10P	(E80UX, UY)
CN404	1-573-842-11	CONNECTOR, BOARD TO BOARD 10P	(E80AP, VP)
* CN405	1-573-845-11	CONNECTOR, BOARD TO BOARD 13P	
CN801	1-568-787-11	PIN, CONNECTOR 10P	(E80NC, NP, UX, UY)
CN802	1-568-788-21	PIN, CONNECTOR 11P	(E80NC, NP, UX, UY)

< COMPOSITION CIRCUIT BLOCK >

Ref. No.	Part No.	Description	Remark
⚠CP101	1-413-897-11	POWER BLOCK	(E80AP, B, IT, NC, NP, VP)
⚠CP101	1-413-940-11	POWER BLOCK	(E80UX, UY)

< DIODE >

Ref. No.	Part No.	Description	Remark
⚠D101	8-719-510-06	DIODE S1WB60	
⚠D131	8-719-200-82	DIODE 11ES2	
D161	8-719-911-19	DIODE 1SS119	
D162	8-719-109-85	DIODE RD5.1ES-B2	
⚠D181	8-719-911-19	DIODE 1SS119	
⚠D182	8-719-911-19	DIODE 1SS119	
⚠D183	8-719-911-19	DIODE 1SS119	
⚠D184	8-719-911-19	DIODE 1SS119	
⚠D195	8-719-911-19	DIODE 1SS119	
⚠D196	8-719-911-19	DIODE 1SS119	
⚠D403	8-719-200-82	DIODE 11ES2	
D404	8-719-911-19	DIODE 1SS119	
⚠D801	8-719-110-78	DIODE RD33ES-B2	(E80AP, B, IT, VP)
D802	8-719-800-76	DIODE 1SS226	(E80AP, B, IT, VP)
D851	8-719-404-46	DIODE MA110	(E80AP, B, IT, VP)
⚠D865	8-719-200-82	DIODE 11ES2	

< FUSE >

Ref. No.	Part No.	Description	Remark
⚠F101	1-576-228-11	FUSE (H.B.C.) T2A 250V	

< FILTER >

Ref. No.	Part No.	Description	Remark
FL184	1-239-803-11	FILTER, EMI	
FL195	1-239-803-11	FILTER, EMI	

< IC >

Ref. No.	Part No.	Description	Remark
⚠IC141	8-759-189-48	IC PQ12RE11	
⚠IC151	8-759-189-49	IC PQ09NF1S	
⚠IC181	8-759-189-47	IC MC34151DR2	
IC401	8-759-247-45	IC MB89095-155	(E80AP, IT, NC, NP, VP)
IC401	8-759-247-46	IC MB89096-119	(E80UX, UY)
IC401	8-759-260-65	IC MB89095-159	(E80B)

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Ref. No.	Part No.	Description	Remark
IC402	8-759-501-99	IC ST93C46AB1	
IC405	8-759-249-28	IC MM1254XFBE	
IC871	8-759-512-95	IC TDA8415	(E80AP, IT, VP)

< JUMPER RESISTOR >

Ref. No.	Part No.	Description	Remark
JR111	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR151	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR401	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR402	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR405	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR406	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR407	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR408	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR409	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR412	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR801	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80AP, B, IT, VP)
JR804	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80B)
JR805	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80B)
JR806	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80B)
JR811	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR812	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR813	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR816	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80AP, B, IT, VP)
JR817	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80AP, B, IT, VP)
JR818	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80AP, B, IT, VP)
JR819	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR820	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR821	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80AP, B, IT, VP)
JR822	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80AP, B, IT, VP)
JR823	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR824	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR825	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80AP, B, IT, VP)
JR826	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80AP, B, IT, VP)
JR827	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80AP, B, IT, VP)
JR828	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR829	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR830	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR833	1-216-295-00	METAL CHIP 0 5% 1/10W	(E80AP, B, IT, VP)
JR834	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80AP, B, IT, VP)

< COIL >

Ref. No.	Part No.	Description	Remark
⚠L121	1-403-588-11	COIL, CHOKE 22uH	
⚠L122	1-403-588-11	COIL, CHOKE 22uH	
L181	1-408-421-00	INDUCTOR 100uH	
L182	1-410-521-11	INDUCTOR 100uH	
L195	1-410-521-11	INDUCTOR 100uH	
L404	1-414-183-41	INDUCTOR 10uH	
L801	1-414-189-31	INDUCTOR 100uH	(E80AP, B, IT, VP)
L802	1-414-183-41	INDUCTOR 10uH	(E80AP, B, IT, VP)
L803	1-410-501-11	INDUCTOR 2.2uH	(E80AP, B, IT, VP)
L804	1-414-183-41	INDUCTOR 10uH	(E80AP, B, IT, VP)
L862	1-408-401-00	INDUCTOR 2.2uH	
L871	1-414-183-41	INDUCTOR 10uH	(E80AP, IT, VP)

< LINE FILTER >

Ref. No.	Part No.	Description	Remark
⚠LF101	1-403-599-11	FILTER, LINE 33MH	
⚠LF102	1-403-599-11	FILTER, LINE 33MH	

< IC LINK >

Ref. No.	Part No.	Description	Remark
⚠PS121	1-532-637-00	LINK, IC 1.0A	
⚠PS123	1-532-675-00	LINK, IC 1.5A	
⚠PS181	1-532-679-00	LINK, IC 0.6A	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q125	8-729-424-08	TRANSISTOR UN2111	
Q126	8-729-421-22	TRANSISTOR UN2211	
⚠Q131	8-729-140-93	TRANSISTOR 2SB733-34	
Q132	8-729-421-22	TRANSISTOR UN2211	
⚠Q161	8-729-140-98	TRANSISTOR 2SD773	
Q451	8-729-018-99	TRANSISTOR 2SD2394-F	
Q452	8-729-902-99	TRANSISTOR DTC114TK	
Q453	8-729-902-99	TRANSISTOR DTC114TK	
⚠Q801	8-729-173-38	TRANSISTOR 2SA733-K	(E80AP, B, IT, VP)
Q802	8-729-422-27	TRANSISTOR 2SD601A-Q	(E80AP, B, IT, VP)
Q803	8-729-422-27	TRANSISTOR 2SD601A-Q	(E80AP, B, IT, VP)
Q805	8-729-303-37	TRANSISTOR 2SD655-E	(E80AP, B, IT, VP)
Q861	8-729-216-22	TRANSISTOR 2SA1162-G	
Q862	8-729-421-19	TRANSISTOR UN2213	
Q871	8-729-422-27	TRANSISTOR 2SD601A-Q	(E80AP, IT, VP)

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R101	1-214-947-00	METAL 2.7M 1% 1/2W	
R125	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R127	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R131	1-249-417-11	CARBON 1K 5% 1/4W	F
R132	1-260-099-11	CARBON 1K 5% 1/2W	
R133	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R161	1-249-412-11	CARBON 390 5% 1/4W	F
R181	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R182	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R405	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R407	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R408	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R409	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R412	1-216-198-91	METAL GLAZE 1K 5% 1/8W	
R421	1-216-198-91	METAL GLAZE 1K 5% 1/8W	
R423	1-216-222-00	METAL GLAZE 10K 5% 1/8W	

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Ref. No.	Part No.	Description				Remark
R431	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R432	1-216-198-91	METAL GLAZE	1K	5%	1/8W	
R433	1-249-417-11	CARBON	1K	5%	1/4W	F
R452	1-216-186-00	METAL GLAZE	330	5%	1/8W	
R453	1-216-047-00	METAL CHIP	820	5%	1/10W	
R454	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R455	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R456	1-216-186-00	METAL GLAZE	330	5%	1/8W	
R457	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R458	1-216-186-00	METAL GLAZE	330	5%	1/8W	
R460	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R462	1-216-296-00	METAL CHIP	0	5%	1/8W	
R463	1-249-417-11	CARBON	1K	5%	1/4W	F
R464	1-249-417-11	CARBON	1K	5%	1/4W	F
R465	1-249-417-11	CARBON	1K	5%	1/4W	F
R466	1-249-417-11	CARBON	1K	5%	1/4W	F
R467	1-249-417-11	CARBON	1K	5%	1/4W	F
R469	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R470	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W	(E80AP, IT)
R470	1-216-214-00	METAL GLAZE	4.7K	5%	1/8W	(E80VP)
R470	1-216-224-91	METAL GLAZE	12K	5%	1/8W	(E80NP)
R470	1-216-230-00	METAL GLAZE	22K	5%	1/8W	(E80NC)
R470	1-216-238-91	METAL GLAZE	47K	5%	1/8W	(E80B)
R470	1-216-296-00	METAL CHIP	0	5%	1/8W	(E80UX, UY)
R471	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R473	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R474	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R475	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R478	1-249-417-11	CARBON	1K	5%	1/4W	F
R480	1-249-429-11	CARBON	10K	5%	1/4W	(E80B, NP)
R484	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R485	1-249-417-11	CARBON	1K	5%	1/4W	F (E80B, NP)
R487	1-216-049-00	METAL CHIP	1K	5%	1/10W	(E80B, NP)
R492	1-216-296-00	METAL CHIP	0	5%	1/8W	
R494	1-249-417-11	CARBON	1K	5%	1/4W	F
R495	1-249-417-11	CARBON	1K	5%	1/4W	F
R496	1-216-073-00	METAL CHIP	10K	5%	1/10W	(E80AP, IT, NC, NP, UX, UY, VP)
R497	1-216-073-00	METAL CHIP	10K	5%	1/10W	(E80AP, IT, NC, NP, UX, UY, VP)
R498	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R499	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R801	1-216-198-91	METAL GLAZE	1K	5%	1/8W	(E80AP, B, IT, VP)
R802	1-216-198-91	METAL GLAZE	1K	5%	1/8W	(E80AP, B, IT, VP)
R803	1-216-182-91	METAL GLAZE	220	5%	1/8W	(E80AP, B, IT, VP)

Ref. No.	Part No.	Description				Remark
R804	1-216-238-91	METAL GLAZE	47K	5%	1/8W	(E80AP, B, IT, VP)
R805	1-216-025-00	METAL CHIP	100	5%	1/10W	(E80AP, B, IT, VP)
R806	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	(E80AP, B, IT, VP)
R807	1-216-075-00	METAL CHIP	12K	5%	1/10W	(E80AP, B, IT, VP)
R808	1-216-049-00	METAL CHIP	1K	5%	1/10W	(E80AP, B, IT, VP)
R809	1-216-295-00	METAL CHIP	0	5%	1/10W	(E80AP, B, IT, VP)
R810	1-216-025-00	METAL CHIP	100	5%	1/10W	(E80AP, B, IT, VP)
R811	1-216-037-00	METAL CHIP	330	5%	1/10W	
R812	1-216-037-00	METAL CHIP	330	5%	1/10W	(E80AP, B, IT, VP)
R820	1-216-198-91	METAL GLAZE	1K	5%	1/8W	(E80B)
R821	1-216-198-91	METAL GLAZE	1K	5%	1/8W	(E80B)
R824	1-216-049-00	METAL CHIP	1K	5%	1/10W	(E80AP, B, IT, VP)
R825	1-216-296-00	METAL CHIP	0	5%	1/8W	(E80AP, B, IT, VP)
R827	1-216-296-00	METAL CHIP	0	5%	1/8W	(E80AP, B, IT, VP)
R836	1-216-049-00	METAL CHIP	1K	5%	1/10W	(E80AP, IT, NC, NP, UX, UY, VP)
R837	1-216-049-00	METAL CHIP	1K	5%	1/10W	(E80AP, IT, NC, NP, UX, UY, VP)
R838	1-216-041-00	METAL CHIP	470	5%	1/10W	(E80B, NP, VP)
R838	1-216-295-00	METAL CHIP	0	5%	1/10W	(E80AP, IT, NC, UX, UY)
R853	1-216-113-00	METAL CHIP	470K	5%	1/10W	(E80AP, B, IT, VP)
R861	1-216-077-00	METAL CHIP	15K	5%	1/10W	(E80B)
R862	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	(E80B)
R862	1-216-081-00	METAL CHIP	22K	5%	1/10W	(E80AP, IT, NC, NP, UX, UY, VP)
R864	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R871	1-216-204-00	METAL GLAZE	1.8K	5%	1/8W	(E80AP, B, IT, VP)
R872	1-216-049-00	METAL CHIP	1K	5%	1/10W	(E80AP, B, IT, VP)
R873	1-216-049-00	METAL CHIP	1K	5%	1/10W	(E80AP, B, IT, VP)
R874	1-216-295-00	METAL CHIP	0	5%	1/10W	(E80AP, B, IT, VP)
R875	1-216-049-00	METAL CHIP	1K	5%	1/10W	(E80AP, B, IT, VP)

Ref. No.	Part No.	Description			Remark
R877	1-216-049-00	METAL CHIP	1K	5%	1/10W (E80AP, B, IT, VP)
R878	1-216-198-91	METAL GLAZE	1K	5%	1/8W (E80B)
		< RF MODULATOR >			
⚠RF801	1-466-328-11	MODULATOR, RF (RFU-2017) (E80AP, IT, NC, NP, VP)			
⚠RF801	1-466-347-11	MODULATOR, RF (RFU-2024) (E80UX, UY)			
⚠RF801	1-466-348-11	MODULATOR, RF (RFU-2023) (E80B)			
		< VARIABLE RESISTOR >			
RV871	1-241-763-11	RES, ADJ, CARBON 4.7K (E80AP, IT, VP)			
		< TUNER >			
⚠TU801	1-693-205-11	TUNER (BTF-3C402) (E80B)			
⚠TU801	1-693-207-11	TUNER (BTF-3C401) (E80AP, IT, VP)			
		< VIBRATOR >			
X401	1-579-463-11	VIBRATOR, CRYSTAL (32KHz)			
X402	1-579-175-11	VIBRATOR, CERAMIC (10MHz)			
X871	1-567-925-11	VIBRATOR, CRYSTAL (10MHz) (E80AP, IT, VP)			
**					
*	A-6727-542-A	RV-33 BOARD, COMPLETE (E80B) **********************			
*	A-6727-545-A	RV-33 BOARD, COMPLETE ********************** (E80AP, IT, NC, NP, UX, UY, VP) (Ref. NO. 1,000 Series)			
*	3-957-421-11	HOLDER, SECAM IC (E80B)			
		< CAPACITOR >			
C001	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C002	1-164-699-11	CERAMIC CHIP	0.0033uF	5%	50V
C003	1-124-465-00	ELECT	0.47uF	20%	50V
C004	1-163-100-00	CERAMIC CHIP	20PF	5%	50V
C005	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C006	1-124-257-00	ELECT	2.2uF	20%	50V
C007	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C009	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C010	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C011	1-124-463-00	ELECT	0.1uF	20%	50V
C012	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C013	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C016	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C018	1-126-163-11	ELECT	4.7uF	20%	50V
C019	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C024	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C026	1-126-157-11	ELECT	10uF	20%	16V
C027	1-163-234-11	CERAMIC CHIP	20PF	5%	50V
C029	1-124-465-00	ELECT	0.47uF	20%	50V
C030	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C031	1-124-638-11	ELECT	22uF	20%	10V
C032	1-126-162-11	ELECT	3.3uF	20%	50V
C033	1-124-638-11	ELECT	22uF	20%	10V
C034	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C036	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C038	1-163-087-00	CERAMIC CHIP	4PF		50V
C039	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C045	1-124-257-00	ELECT	2.2uF	20%	50V
C046	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C047	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C048	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C049	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C050	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C051	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C052	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C053	1-124-465-00	ELECT	0.47uF	20%	50V
C055	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C056	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C057	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C058	1-124-465-00	ELECT	0.47uF	20%	50V
C059	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C060	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C061	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C062	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C063	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C064	1-124-638-11	ELECT	22uF	20%	10V
C065	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C066	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C067	1-165-320-11	CERAMIC CHIP	0.47uF	10%	16V
C069	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C073	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C074	1-163-125-00	CERAMIC CHIP	220PF	5%	50V (E80B)
C075	1-163-117-00	CERAMIC CHIP	100PF	5%	50V (E80B)
C075	1-163-129-00	CERAMIC CHIP	330PF	5%	50V (E80AP, IT, NC, NP, UX, UY, VP)
C079	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C081	1-163-091-00	CERAMIC CHIP	8PF		50V
C083	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C086	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C087	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C095	1-163-033-00	CERAMIC CHIP	0.022uF		50V (E80B)
C096	1-163-129-00	CERAMIC CHIP	330PF	5%	50V (E80B)
C098	1-124-638-11	ELECT	22uF	20%	10V
C099	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C101	1-163-031-11	CERAMIC CHIP	0.01uF		50V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
C102	1-163-130-00	CERAMIC CHIP	360PF	5%	50V
C120	1-124-638-11	ELECT	22uF	20%	10V
C121	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C203	1-163-031-11	CERAMIC CHIP	0.01uF		50V (E80B)
C204	1-126-154-11	ELECT	47uF	20%	6.3V (E80B)
C205	1-126-163-11	ELECT	4.7uF	20%	50V (E80B)
C206	1-163-035-00	CERAMIC CHIP	0.047uF		50V (E80B)
C207	1-124-638-11	ELECT	22uF	20%	10V (E80B)
C208	1-163-113-00	CERAMIC CHIP	68PF	5%	50V (E80B)
C209	1-163-031-11	CERAMIC CHIP	0.01uF		50V (E80B)
C260	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C261	1-124-584-00	ELECT	100uF	20%	10V
C262	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C263	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C264	1-124-257-00	ELECT	2.2uF	20%	50V
C265	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C267	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C268	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C269	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C270	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C273	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C274	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C275	1-126-160-11	ELECT	1uF	20%	50V
C276	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C278	1-163-113-00	CERAMIC CHIP	68PF	5%	50V (E80B)
C701	1-124-638-11	ELECT	22uF	20%	10V (E80B)
C705	1-124-638-11	ELECT	22uF	20%	10V (E80B)
C801	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C802	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C803	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C804	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C805	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C806	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C807	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C808	1-124-584-00	ELECT	100uF	20%	10V
C809	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C810	1-124-584-00	ELECT	100uF	20%	10V
C811	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C813	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C814	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C815	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C816	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C817	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C818	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C822	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C826	1-124-229-00	ELECT	33uF	20%	10V
C827	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C829	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C830	1-163-107-00	CERAMIC CHIP	39PF	5%	50V

Ref. No.	Part No.	Description			Remark
C838	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C840	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C842	1-126-160-11	ELECT	1uF	20%	50V
C881	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C882	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C883	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C884	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C901	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C902	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C903	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C904	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C907	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C908	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C909	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C910	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C911	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C912	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C913	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C914	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C916	1-216-295-00	METAL CHIP	0	5%	1/10W
C917	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C920	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C921	1-124-229-00	ELECT	33uF	20%	10V

< FILTER >

Ref. No.	Part No.	Description			Remark
CF201	1-527-943-00	FILTER, CERAMIC (E80B)			

< CONNECTOR >

Ref. No.	Part No.	Description			Remark
CN001	1-573-828-11	CONNECTOR, BOARD TO BOARD 14P			
CN002	1-573-834-11	CONNECTOR, BOARD TO BOARD 20P			
CN801	1-563-590-11	CONNECTOR, FLEXIBLE 13P			
* CN802	1-564-029-00	PIN, CONNECTOR 4P			
* CN803	1-564-013-11	PIN, CONNECTOR 3P			

< DIODE >

Ref. No.	Part No.	Description			Remark
D801	8-719-801-78	DIODE	1SS184		
D802	8-719-801-78	DIODE	1SS184		
D803	8-719-801-78	DIODE	1SS184		
D901	8-719-951-22	IC	IMN10		

< DELAY LINE >

Ref. No.	Part No.	Description			Remark
DL003	1-415-728-21	DELAY LINE, 2H (ULTRASONIC)			
DL003	1-415-728-31	DELAY LINE, 2H (ULTRASONIC)			

< IC >

Ref. No.	Part No.	Description			Remark
IC001	8-759-183-95	IC	HA118385FEB		
IC003	8-759-194-19	IC	MSM7450MS-K-TP		
IC201	8-759-199-28	IC	BA7025F-E2 (E80B)		

Ref. No.	Part No.	Description	Remark
IC260	8-759-055-49	IC AN3327K	
IC801	8-759-194-25	IC HA118191NT	
IC702	1-809-959-21	IC TME687 (E80B)	
		< JUMPER RESISTOR >	
JR022	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR030	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< COIL >	
L001	1-408-970-21	INDUCTOR 10uH	
L002	1-408-975-21	INDUCTOR 27uH	
L003	1-408-970-21	INDUCTOR 10uH	
L005	1-408-972-21	INDUCTOR 15uH	
L006	1-408-976-21	INDUCTOR 33uH	
L007	1-408-982-11	INDUCTOR 100uH	
L008	1-408-982-11	INDUCTOR 100uH	
L009	1-408-980-21	INDUCTOR 68uH	
L010	1-408-976-21	INDUCTOR 33uH	
L011	1-408-983-21	INDUCTOR 120uH	
L012	1-408-429-00	INDUCTOR 470uH	
L013	1-408-427-00	INDUCTOR 330uH	
L014	1-408-978-21	INDUCTOR 47uH	
L015	1-408-982-11	INDUCTOR 100uH	
L017	1-408-985-21	INDUCTOR 180uH	
L018	1-408-982-11	INDUCTOR 100uH	
L019	1-408-980-21	INDUCTOR 68uH (E80B)	
L202	1-408-982-11	INDUCTOR 100uH (E80B)	
L260	1-408-982-11	INDUCTOR 100uH	
L701	1-408-982-11	INDUCTOR 100uH (E80B)	
L801	1-408-948-00	INDUCTOR 220uH	
L802	1-408-948-00	INDUCTOR 220uH	
L803	1-408-982-11	INDUCTOR 100uH	
L804	1-408-982-11	INDUCTOR 100uH	
L810	1-408-985-21	INDUCTOR 180uH	
L812	1-408-982-11	INDUCTOR 100uH	
L901	1-408-974-21	INDUCTOR 22uH	
L902	1-408-948-00	INDUCTOR 220uH	
L908	1-408-982-11	INDUCTOR 100uH	
		< TRANSISTOR >	
Q001	8-729-010-25	TRANSISTOR MSD601-RT1	
Q003	8-729-010-25	TRANSISTOR MSD601-RT1	
Q004	8-729-010-25	TRANSISTOR MSD601-RT1	
Q006	8-729-010-25	TRANSISTOR MSD601-RT1	
Q007	8-729-010-05	TRANSISTOR MSB709-RT1	
Q011	8-729-010-25	TRANSISTOR MSD601-RT1	
Q013	8-729-010-25	TRANSISTOR MSD601-RT1	
Q016	8-729-424-56	TRANSISTOR UN211L	

Ref. No.	Part No.	Description	Remark
Q021	8-729-421-19	TRANSISTOR UN2213	
Q029	8-729-421-19	TRANSISTOR UN2213	
Q030	8-729-421-19	TRANSISTOR UN2213	
Q031	8-729-424-08	TRANSISTOR UN2111	
Q032	8-729-421-19	TRANSISTOR UN2213 (E80B)	
Q032	8-729-424-90	TRANSISTOR UN221L-TX (E80AP, IT, NC, NP, UX, UY, VP)	
Q033	8-729-421-19	TRANSISTOR UN2213 (E80B)	
Q033	8-729-424-90	TRANSISTOR UN221L-TX (E80AP, IT, NC, NP, UX, UY, VP)	
Q034	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q035	8-729-421-19	TRANSISTOR UN2213 (E80B)	
Q040	8-729-421-19	TRANSISTOR UN2213	
Q045	8-729-421-19	TRANSISTOR UN2213 (E80B)	
Q051	8-729-421-19	TRANSISTOR UN2213	
Q201	8-729-010-25	TRANSISTOR MSD601-RT1 (E80B)	
Q810	8-729-421-19	TRANSISTOR UN2213	
Q811	8-729-921-12	TRANSISTOR 2SD1834	
Q817	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q818	8-729-421-19	TRANSISTOR UN2213	
Q819	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q840	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q841	8-729-216-21	TRANSISTOR 2SA1162Y-TE85L	
Q904	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q906	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q907	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q908	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q909	8-729-230-49	TRANSISTOR 2SC2712-YG	
		< RESISTOR >	
R001	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R002	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R003	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R004	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R005	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R009	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R010	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R012	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R014	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R016	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R018	1-216-037-00	METAL CHIP 330 5% 1/10W	
R019	1-216-037-00	METAL CHIP 330 5% 1/10W	
R024	1-216-035-00	METAL CHIP 270 5% 1/10W	
R025	1-216-056-00	METAL GLAZE 2K 5% 1/10W	
R027	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R029	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R030	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R040	1-216-121-00	METAL CHIP 1M 5% 1/10W	

RV-33

Ref. No.	Part No.	Description				Remark
R041	1-216-046-00	METAL CHIP	750	5%	1/10W	
R042	1-216-043-00	METAL CHIP	560	5%	1/10W	
R043	1-216-043-00	METAL CHIP	560	5%	1/10W	
R044	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R045	1-216-058-00	METAL GLAZE	2.4K	5%	1/10W	
R046	1-216-045-00	METAL CHIP	680	5%	1/10W	
R047	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R048	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R049	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R050	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R051	1-216-036-00	METAL CHIP	300	5%	1/10W	
R052	1-216-052-00	METAL CHIP	1.3K	5%	1/10W	
R053	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R055	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R056	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R057	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R058	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R059	1-216-037-00	METAL CHIP	330	5%	1/10W	
R060	1-216-043-00	METAL CHIP	560	5%	1/10W	
R062	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R065	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R066	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R067	1-216-295-00	METAL CHIP	0	5%	1/10W	
R069	1-216-047-00	METAL CHIP	820	5%	1/10W	
R070	1-216-049-00	METAL CHIP	1K	5%	1/10W	(E80B)
R071	1-216-058-00	METAL GLAZE	2.4K	5%	1/10W	
R072	1-216-072-00	METAL CHIP	9.1K	5%	1/10W	
R075	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R077	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R078	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R079	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R080	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R081	1-216-073-00	METAL CHIP	10K	5%	1/10W	(E80B)
R082	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R083	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R084	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R085	1-216-045-00	METAL CHIP	680	5%	1/10W	
R086	1-216-066-00	METAL CHIP	5.1K	5%	1/10W	
R088	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R091	1-216-041-00	METAL CHIP	470	5%	1/10W	(E80B)
R091	1-216-295-00	METAL CHIP	0	5%	1/10W	(E80AP, IT, NC, NP, UX, UY, VP)
R094	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R099	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R102	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R113	1-216-295-00	METAL CHIP	0	5%	1/10W	
R119	1-216-066-00	METAL CHIP	5.1K	5%	1/10W	
R204	1-216-049-00	METAL CHIP	1K	5%	1/10W	(E80B)
R205	1-216-073-00	METAL CHIP	10K	5%	1/10W	(E80B)
R206	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	(E80B)
R207	1-216-109-00	METAL CHIP	330K	5%	1/10W	(E80B)
R208	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	(E80B)
R262	1-216-035-00	METAL CHIP	270	5%	1/10W	
R263	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R265	1-216-033-00	METAL CHIP	220	5%	1/10W	
R266	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R267	1-216-035-00	METAL CHIP	270	5%	1/10W	
R268	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R269	1-216-081-00	METAL CHIP	22K	5%	1/10W	(E80B)
R270	1-216-081-00	METAL CHIP	22K	5%	1/10W	(E80B)
R271	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R276	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R801	1-216-025-00	METAL CHIP	100	5%	1/10W	
R802	1-216-037-00	METAL CHIP	330	5%	1/10W	
R805	1-216-610-11	METAL CHIP	20	0.50%	1/10W	
R806	1-216-025-00	METAL CHIP	100	5%	1/10W	
R807	1-216-025-00	METAL CHIP	100	5%	1/10W	
R811	1-216-037-00	METAL CHIP	330	5%	1/10W	(E80AP, B, IT, VP)
R812	1-216-025-00	METAL CHIP	100	5%	1/10W	
R815	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R816	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R817	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R835	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R836	1-216-056-00	METAL GLAZE	2K	5%	1/10W	
R838	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R842	1-216-622-11	METAL CHIP	62	0.50%	1/10W	
R843	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R844	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R846	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R847	1-216-078-00	METAL GLAZE	16K	5%	1/10W	
R856	1-216-033-00	METAL CHIP	220	5%	1/10W	
R857	1-216-033-00	METAL CHIP	220	5%	1/10W	
R858	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R859	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R861	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R862	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R863	1-216-047-00	METAL CHIP	820	5%	1/10W	
R901	1-216-039-00	METAL CHIP	390	5%	1/10W	
R902	1-216-033-00	METAL CHIP	220	5%	1/10W	
R903	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R904	1-216-295-00	METAL CHIP	0	5%	1/10W	
R906	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R907	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R908	1-216-033-00	METAL CHIP	220	5%	1/10W	
R910	1-216-025-00	METAL CHIP	100	5%	1/10W	
R913	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	

Ref. No.	Part No.	Description			Remark
R914	1-216-077-00	METAL CHIP	15K	5%	1/10W
R915	1-216-075-00	METAL CHIP	12K	5%	1/10W
R916	1-216-039-00	METAL CHIP	390	5%	1/10W
R917	1-216-045-00	METAL CHIP	680	5%	1/10W
R918	1-216-043-00	METAL CHIP	560	5%	1/10W
R919	1-216-039-00	METAL CHIP	390	5%	1/10W
R920	1-216-043-00	METAL CHIP	560	5%	1/10W
R921	1-216-049-00	METAL CHIP	1K	5%	1/10W
R922	1-216-041-00	METAL CHIP	470	5%	1/10W
R924	1-216-031-00	METAL CHIP	180	5%	1/10W
R925	1-216-045-00	METAL CHIP	680	5%	1/10W
R926	1-216-025-00	METAL CHIP	100	5%	1/10W
R927	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R928	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R929	1-216-043-00	METAL CHIP	560	5%	1/10W
R966	1-216-295-00	METAL CHIP	0	5%	1/10W

< VARIABLE RESISTOR >

RV001	1-238-856-11	RES, ADJ, CERMET 10K
RV003	1-238-856-11	RES, ADJ, CERMET 10K
RV004	1-238-856-11	RES, ADJ, CERMET 10K
RV005	1-238-856-11	RES, ADJ, CERMET 10K
RV006	1-238-857-11	RES, ADJ, CERMET 22K
RV009	1-238-854-11	RES, ADJ, CERMET 2.2K
RV201	1-238-852-11	RES, ADJ, CERMET 470 (E80B)

< TRANSFORMER >

T001	1-403-617-11	COIL, TANK
T201	1-409-467-11	COIL (TRAP 7.8K) (E80B)

< VIBRATOR >

X001	1-760-118-21	VIBRATOR, CRYSTAL (4.43MHz)

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* A-6754-656-A TU-146 BOARD, COMPLETE (E80UX, UY)
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* A-6754-657-A TU-146 BOARD, COMPLETE (E80NC, NP)
****
(Ref. NO. 7,000 Series)

< CAPACITOR >

C002	1-126-233-11	ELECT	22uF	20%	50V
C003	1-124-126-00	ELECT	47uF	20%	10V
C004	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C006	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C007	1-126-101-11	ELECT	100uF	20%	16V
C009	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C010	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C011	1-124-126-00	ELECT	47uF	20%	10V
C012	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C013	1-124-927-11	ELECT	4.7uF	20%	100V
C014	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C017	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C018	1-124-126-00	ELECT	47uF	20%	10V
C019	1-126-101-11	ELECT	100uF	20%	16V
C020	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C022	1-124-907-11	ELECT	10uF	20%	50V
C023	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C024	1-130-483-00	MYLAR	0.01uF	5%	50V (E80NC, NP)
C025	1-126-101-11	ELECT	100uF	20%	16V
C026	1-124-907-11	ELECT	10uF	20%	50V
C027	1-124-907-11	ELECT	10uF	20%	50V
C028	1-124-907-11	ELECT	10uF	20%	50V
C029	1-124-907-11	ELECT	10uF	20%	50V
C030	1-124-907-11	ELECT	10uF	20%	50V (E80NC, NP)
C031	1-124-907-11	ELECT	10uF	20%	50V (E80NC, NP)
C036	1-124-907-11	ELECT	10uF	20%	50V
C037	1-124-907-11	ELECT	10uF	20%	50V
C038	1-124-907-11	ELECT	10uF	20%	50V
C039	1-124-907-11	ELECT	10uF	20%	50V

< CONNECTOR >

CN001	1-568-787-11	PIN, CONNECTOR 10P
CN002	1-568-788-21	PIN, CONNECTOR 11P

< DIODE >

D001	8-719-800-76	DIODE	1SS226
D004	8-719-978-94	DIODE	DTZ30C
D051	8-719-800-76	DIODE	1SS226

< IC >

IC001	8-759-512-95	IC	TDA8415 (E80NC, NP)
IC002	8-759-996-43	IC	RC4558PS

< JUMPER RESISTOR >

JR010	1-216-296-00	METAL CHIP	0	5%	1/8W	(E80NC, NP)
JR011	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR012	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR013	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR014	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR015	1-216-296-00	METAL CHIP	0	5%	1/8W	(E80UX, UY)
JR016	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR017	1-216-296-00	METAL CHIP	0	5%	1/8W	

TU-146 VP-39

Ref. No.	Part No.	Description	Remark
JR018	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR019	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR020	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR021	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80UX, UY)
JR022	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80NC, NP)
JR023	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80NC, NP)
JR025	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80UX, UY)
JR026	1-216-296-00	METAL CHIP 0 5% 1/8W	(E80NC, NP)

< COIL >

Ref. No.	Part No.	Description	Remark
L001	1-414-183-41	INDUCTOR 10uH	
L002	1-414-189-31	INDUCTOR 100uH	
L003	1-414-183-41	INDUCTOR 10uH	
L005	1-414-183-41	INDUCTOR 10uH	
L006	1-414-183-41	INDUCTOR 10uH	
L007	1-414-183-41	INDUCTOR 10uH	

< DECODER BLOCK >

Ref. No.	Part No.	Description	Remark
NCM01	1-466-902-11	DECODER BLOCK. e j(NCA-395A)	(E80UX, UY)
NCM01	1-466-903-11	DECODER BLOCK (NCA-389A)	(E80NC, NP)

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q001	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q002	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q003	8-729-173-38	TRANSISTOR 2SA733-K	
Q005	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q051	8-729-303-37	TRANSISTOR 2SD655-E	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R001	1-216-033-00	METAL CHIP 220 5% 1/10W	
R002	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R003	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R004	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R005	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R006	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R007	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R008	1-216-025-00	METAL CHIP 100 5% 1/10W	
R010	1-216-295-00	METAL CHIP 0 5% 1/10W	
R011	1-216-025-00	METAL CHIP 100 5% 1/10W	
R012	1-216-037-00	METAL CHIP 330 5% 1/10W	
R013	1-216-037-00	METAL CHIP 330 5% 1/10W	
R014	1-216-049-00	METAL CHIP 1K 5% 1/10W	(E80NC, NP)
R015	1-216-049-00	METAL CHIP 1K 5% 1/10W	(E80NC, NP)
R016	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	(E80NC, NP)
R021	1-216-049-00	METAL CHIP 1K 5% 1/10W	(E80UX, UY)
R022	1-216-049-00	METAL CHIP 1K 5% 1/10W	(E80UX, UY)
R024	1-216-041-00	METAL CHIP 470 5% 1/10W	
R025	1-216-041-00	METAL CHIP 470 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R027	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R028	1-216-045-00	METAL CHIP 680 5% 1/10W	
R030	1-216-295-00	METAL CHIP 0 5% 1/10W	
R031	1-216-295-00	METAL CHIP 0 5% 1/10W	
R033	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R034	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R035	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R036	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R037	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(E80NC, NP)
R038	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	(E80NC, NP)
R039	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(E80NC, NP)
R040	1-216-220-00	METAL GLAZE 8.2K 5% 1/8W	(E80NC, NP)
R041	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R042	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R043	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R044	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R045	1-216-295-00	METAL CHIP 0 5% 1/10W	
R046	1-216-295-00	METAL CHIP 0 5% 1/10W	
R051	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R052	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R053	1-216-198-91	METAL GLAZE 1K 5% 1/8W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV001	1-241-763-11	RES. ADJ. CARBON 4.7K	(E80NC, NP)

< TUNER >

Ref. No.	Part No.	Description	Remark
⚠TU001	1-693-206-11	TUNER (BTF-3U601)	(E80UX, UY)
⚠TU001	1-693-207-11	TUNER (BTF-3C401)	(E80NC, NP)

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X001	1-567-925-11	VIBRATOR, CRYSTAL (10MHz)	(E80NC, NP)

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* A-6781-281-A VP-39 BOARD, COMPLETE (E80VP)

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(Ref. NO. 9,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C201	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C202	1-163-075-00	CERAMIC CHIP 0.047uF 50V	
C204	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C206	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C210	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN201	1-573-824-11	CONNECTOR, BOARD TO BOARD 10P	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D201	8-719-911-19	DIODE 1SS119	
		< IC >	
IC201	8-759-030-60	IC SDA5642	
IC202	8-759-147-30	IC uPD75004GB-VSX182	
		< JUMPER RESISTOR >	
JR201	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L241	1-410-509-11	INDUCTOR 10uH	
		< RESISTOR >	
R201	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R202	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R203	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R204	1-216-119-00	METAL CHIP 820K 5% 1/10W	
R205	1-216-025-00	METAL CHIP 100 5% 1/10W	
R206	1-216-119-00	METAL CHIP 820K 5% 1/10W	
R207	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R208	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R210	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R211	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R212	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R213	1-216-073-00	METAL CHIP 10K 5% 1/10W	
		< VIBRATOR >	
X201	1-577-101-11	VIBRATOR, CERAMIC (4.19MHz)	

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MISCELLANEOUS

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Ref. No.	Part No.	Description	Remark
1	1-467-387-11	SWITCH BLOCK, CONTROL (E80AP, UX, UY)	
1	1-467-387-21	SWITCH BLOCK, CONTROL (E80VP)	
1	1-467-387-31	SWITCH BLOCK, CONTROL (E80B)	
1	1-467-387-41	SWITCH BLOCK, CONTROL (E80IT, NC, NP)	
65	1-555-110-00	CABLE, PIN (E80NC, NP, UX, UY)	
260	1-543-647-11	HEAD, FE	
267	A-6761-129-C	HEAD BLOCK ASSY, ACE	
282	1-550-872-11	DRUM ASSY, ROTARY UPPER (DZR-60-R)	
M901	1-550-873-11	LOWER DRUM ASSY DZL-60A-R	
M902	8-835-489-01	MOTOR, DC U-26K	
M903	X-3733-302-1	MOTOR ASSY, CAM	
M904	X-3727-784-1	MOTOR ASSY	
S1	1-571-920-11	SWITCH, ROTARY (CAM ENCODER)	

ACCESSORIES & PACKING MATERIALS

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Ref. No.	Part No.	Description	Remark
⚠	1-574-056-11	CORD, POWER (E80VP)	
⚠	1-575-131-11	CORD, POWER (E80AP, B, IT, NC, NP)	
	1-696-593-11	CORD, CONNECTION (PAL) (E80AP, IT, NC, NP, UX, UY, VP)	
	1-696-861-11	CORD, CONNECTION	
	1-696-905-11	CORD, CONNECTION (E80B)	
⚠	1-590-865-11	CORD, POWER (E80UX, UY)	
	3-695-308-01	DRIVER, VOLUME	
*	3-701-634-00	BAG, POLYETHYLENE	
	3-757-944-11	MANUAL, INSTRUCTION (ENGLISH) (E80UX, UY)	
	3-757-944-41	MANUAL, INSTRUCTION (DUTCH) (E80AP, NC)	
	3-757-944-51	MANUAL, INSTRUCTION (FRENCH) (E80B)	
	3-757-944-61	MANUAL, INSTRUCTION (SPANISH) (E80NP)	
	3-757-944-71	MANUAL, INSTRUCTION (FRENCH, GERMAN) (E80NC, VP)	
	3-757-944-81	MANUAL, INSTRUCTION (SWEDISH, PORTUGUESE, DANISH) (E80NC)	
	3-757-944-91	MANUAL, INSTRUCTION (ITALIAN) (E80IT, VP)	
*	3-957-486-01	CUSHION (UPPER)	
*	3-957-487-01	CUSHION (LOWER)	
*	3-957-492-01	INDIVIDUAL CARTON (E80AP, IT, NC, NP, VP)	
*	3-957-492-11	INDIVIDUAL CARTON (E80B)	
*	3-957-492-21	INDIVIDUAL CARTON (E80UX, UY)	
*	3-957-492-31	INDIVIDUAL CARTON (E80NC, NP)	
	3-957-513-11	RING, SHUTTLE (E80B)	
	X-3943-637-1	BUTTON ASSY (E80B)	

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HARDWARE LIST

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#1	7-685-648-79	SCREW +BVTP 3X12 TYPE2
#2	7-685-782-01	SCREW +PTT 2X5 (S)
#3	7-624-106-04	STOP RING 3.0, TYPE-E
#4	7-682-645-01	SCREW +PS 3X4
#5	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3
#6	7-682-548-04	SCREW +P 3X8
#7	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#8	7-621-732-08	SCREW
#10	7-628-254-05	SCREW +PS 2.6X5
#11	7-624-102-04	STOP RING 1.5, TYPE E
#13	7-682-546-04	SCREW +P 3X5

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

SECTION 6
INTERFACE, IC PIN FUNCTION DESCRIPTION

6-1. SYSTEM CONTROL – VIDEO BLOCK INTERFACE

Signal	Pin No.	I/O	STOP/ FF/ REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	PB-PAUSE	SLOW	×2	CUE	REVIEW	REC	REC-PAUSE
$\overline{\text{V·PB}}$	MA-181 IC203 (95)	O	H	H	H	L	L	L	L	L	L	H	H
HEAD CONT	MA-181 IC203 (85)	O	L	L	L	L	HI-Z (2.5 V)	*1	*10	*5	*5	L	L
RF SW P (SW30)	MA-181 IC203 ①	O	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
Q VD/V MUTE	MA-181 IC203 ②	O	L	L	L	*3	*4	*4	*4	*4	*4	L	L
$\overline{\text{SP}}$	MA-181 IC203 (91)	O	*6	*6	*6	*7	*7	*7	*7	*7	*7	*6	*6
ENV GAIN	MA-181 IC203 (92)	O	*11	*11	*11	*7	*7	*7	*7	*7	*7	*11	*11
REC·P	MA-181 IC203 ⑤	O	L	L	L	L	L	L	L	L	L	L	H
REC	MA-181 IC203 (98)	O	L	L	L	L	L	L	L	L	L	H	H
V SYNC	MA-181 IC203 (66)	I	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8
OSD MUTE	MA-181 IC203 (71)	O	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9
E TAPE	MA-181 IC203 ㊾	O	L	L	L	*12	*12	*12	*12	*12	*12	L	L
$\overline{\text{NTSC}}$	MA-181 IC203 ㉗	O	H	H	H	H	H	H	H	H	H	H	H
$\overline{\text{3.58NTSC}}$	MA-181 IC203 ㉖	O	H	H	H	H	H	H	H	H	H	H	H
JOG	MA-181 IC203 (97)	O	L	L	L	L	H	H	H	H	H	L	L
ORC SETTEI	MA-181 IC203 (76)	O	L	L	L	L	L	L	L	L	L	*13	*13

*1. Foward slow mode: "HI-Z (2.5 V)" in tape stop, "L" in tape running (approx. 40 msec.).
Foward slow mode: "HI-Z (2.5 V)" in tape stop, "H" in tape running SP mode (approx. 40 msec.).
"L" in tape running EP mode (approx. 40 msec.).

*2. Synchronized with drum rotation. 25 Hz 50% duty pulse.

*3. Normally "L". "H" when CTL signal is not generated.

*4. V period "H" pulse.

*5. "H" in SP mode. "L" in LP/EP mode.

*6. Selected by REC mode. SP mode: "L".

*7. Selected by tape recording mode.

Model / Signal	SP	LP	EP
$\overline{\text{SP}}$ (91)	L	H	H
ENV GAIN (92)	L	L	H

*8. Composite Sync signal (positive).

*9. "H" when menu screen or blue back screen.

*10. "HI-Z (2.5 V)" in LP/EP mode. "H" in SP mode.

*11. Selected by REC mode: "H" EP mode.

*12. "L" when APC is off. "H" when APC is ON and "HG tape" is used.

*13. "H" during APC measurement.

6-2. SYSTEM CONTROL – SERVO PERIPHERAL CIRCUIT INTERFACE

Signal	Pin No.	I/O	STOP	FF	REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	PB·PAUSE	SLOW	×2	CUE	REVIEW	REC	PEC·PAUSE	PB INDEX WRT/ERS
REC CTL	MA-181 IC203 ⑦	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	
$\overline{\text{CAP STOP}}$	MA-181 IC203 ㊳	O (O.D)	L	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	L	*3	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	L	
STEP PLS	MA-181 IC203 ㉔	O	L	L	L	L	L	L	L	*2	L	L	L	L	L	
CTL REC	MA-181 IC203 (78)	O	L	L	L	L	L	L	L	L	L	L	L	H	H	H
INDEX	MA-181 IC203 ㉚	O	L	L	L	L	L	L	L	L	L	L	L	L	L	H
PB CTL	MA-181 IC203 (61)	I	H/L	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H/L	
VD CTL	MA-181 IC203 (77)	I	H/L	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H/L	
DRUM PG	MA-181 IC203 (68)	I	*4	*7	*7	*5	*5	*7	*7	*7	*7	*7	*7	*7	*7	
DRUM FG	MA-181 IC203 (69)	I	H/L	*8	*8	*5	*5	*8	*8	*8	*8	*8	*8	*8	*8	
CAP FG	MA-181 IC203 (70)	I	H/L	*6	*6	*5	*5	*6	H/L	*9	*6	*6	*6	*6	H/L	
CAP DA	MA-181 IC203 (73)	O	*10	*10	*10	*10	*10	*11	*10	*10	*11	*11	*11	*11	*10	
DRUM DA	MA-181 IC203 (74)	O	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	
CTL STEP	MA-181 IC203 ㉙	O	L	L	L	L	L	L	L	*13	L	L	L	L	L	

*1. 30 Hz or 25 Hz pulse.
*2. Pulse at tape running.
*3. Reverse logic pulse of STEP PLS.
*4. "L" when drum rotation stop.
*5. Unstable period pulse.
*6. Pulse of period in proportion to tape speed.
*7. 30 Hz or 25 Hz pulse.
*8. 360 Hz or 300 Hz or 180/150 Hz pulse.
*9. Pulse at tape running.
*10. Approx. 2 msec period "H" or "L" pulse.
*11. Approx. 1.5 msec period "H" or "L" pulse.
*12. Approx. 3 msec period "H" or "L" pulse.
*13. "H" when FWD direction STEP drive.

6-3. SYSTEM CONTROL – MECHANISM BLOCK INTERFACE

Signal	Pin No.	I/O	HI-SPEED REW	EJECTED	CASSETTE LOADING	CASSETTE UNLOAD-ING	TAPE THREAD-ING	TAPE UNTHREAD-ING	STOP	FF	REW	PB	PB-PAUSE	SLOW	×2	CUE	REVIEW	REC	PEC-PAUSE
CAM *1	MA-181 IC203 ⑫	O	L	L	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L
LOAD	MA-181 IC203 ⑭	O	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L
CW/CCW	MA-181 IC203 ⑬	O			H	L	H	L											
MODE 1	MA-181 IC203 (58)	I	H	L	L	L	H	H	L	H	H	H	L	L	H	H	H	H	L
MODE 2	MA-181 IC203 (57)	I	L	H	H	H	H	H	L	L	L	L	H	H	L	L	L	L	H
MODE 3	MA-181 IC203 (56)	I	H	H	H	H	L	L	L	L	L	H	H	H	H	H	L	H	H
MODE 4	MA-181 IC203 (55)	I	H	H	H	H	H	H	L	H	H	L	L	L	L	L	L	L	L
REC PRF	MA-181 IC203 ⑮	I	*2	L	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
C-UP/DOWN	MA-181 IC203 ⑯	I	L	H	H→L	L→H	L	L	L	L	L	L	L	L	L	L	L	L	L
TREEL FG	MA-181 IC203 (60)	I	*3	H/L	H/L	H/L	H/L	H/L	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
SREEL FG	MA-181 IC203 (63)	I	*3	H/L	H/L	H/L	*3	*3	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
END LED	MA-181 IC203 ㉜	O (O.D)	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
CAP TRQ 1	MA-181 IC203 ㉞	O (O.D)	*1							*1	*1			*6		*1	*1		
CAP TRQ 2	MA-181 IC203 ㉝	O (O.D)								*1	*1								
CAP RVS	MA-181 IC203 ⑫	O	H	H			L	H	H/L	L	H	L	L	L/*5	L	L	H	L	L
T SENS	MA-181 IC203 ⑰	I	*7	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
S SENS	MA-181 IC203 ⑱	I	*7	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7

*1. "L" when mechanism mode transition.
*2. "L" when erasing protection tab is bent, "H" when not bent.
*3. Pause of period in proportion to reel rotating speed.
*4. Approx. 2 msec period "H" pulse.
*5. Pulse at tape running.
*6. "L" when tape running and CAP RVS is "H".
*7. Normally "L". 2 msec period "H" pulse when tape top or tape end is detected.

6-4. SYSTEM CONTROL – SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE

Signal	Pin No.	I/O	I/O level
$\overline{\text{COSMO·RESET}}$	MA-181 IC203 ㊵	I	Normally "H". "L" when service interruption is detected or restored.
$\overline{\text{COSMO·CS}}$	MA-181 IC203 ㊹	I	Chip select signal from timer microprocessor. V period "L" pulse.
SI·BUS	MA-181 IC203 ㊺	I	Serial communication data from timer microprocessor. V period "L" pulse.
SO·BUS	MA-181 IC203 ㊻	O	Serial communication data to timer microprocessor. V period "L" pulse.
S CLK	MA-181 IC203 ㊼	I	Serial communication clock with timer microprocessor. V period "L" pulse.

6-5. SYSTEM CONTROL – AUDIO BLOCK INTERFACE

Signal	Pin No.	I/O	STOP/ FF/ REW	TAPE LOADING	TAPE UNLOAD-ING	PB	PB·PAUSE	SLOW	×2	CUE	REVIEW	REC	REC·PAUSE
AF ENVELOP	MA-181 IC203 (61)	I	AF RF envelope signal input terminal for automatic tracking.										
NA PB	MA-181 IC203 ⑪	O	L	L	L	H	H	H	H	H	H	L	L
A MUTE	MA-181 IC203 ㊲	O (O.D)	L	L	L	*4	H	H	H	H	H	L	L
$\overline{\text{SP}}$	MA-181 IC203 (91)	O	*2	*2	*2	*3	*3	*3	*3	*3	*3	*2	*2
NA REC·$\overline{\text{P}}$	MA-181 IC203 ⑩	O	L	L	L	L	L	L	L	L	L	H	L
AF REC·$\overline{\text{P}}$	MA-181 IC203 ④	O	L	L	L	L	L	L	L	L	L	H	L
AF SWP	MA-181 IC203 (100)	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
AF SW POSITION	MA-181 IC203 (51)	I	Input terminal for AF switching position adjustment.										
FULL $\overline{\text{ERS}}$	MA-181 IC203 ㊱	O (O.D)	H	H	H	H	H	H	H	H	H	L	H

*1. 30 Hz 50% duty pulse approx. 5 msec delayed from RF SW P.
*2. Selected by REC mode selector. SP mode: "L".
*3. Selected by tape recording mode. SP mode: "L".
*4. Nomaly "L", "H" when there is not CTL pulse.

6-6. SYSTEM CONTROL AND RF MODULATOR – INPUT SELECTION BLOCK INTERFACE

Signal	Pin No.	I/O	I/O level
LINE 1	MA-181· IC203 (79)	O	*1. Input select control signal.
LINE 2	MA-181 IC203 (82)	O	

*1.

Signal \ Input	Tuner	LINE 1	LINE 2
LINE 1 (79)	L	H	L
LINE 2 (82)	L	L	H

6-7. SERVO/SYSTEM CONTROL MICROPROCESSOR PIN FUNCTION (MA-181 BOARD IC203 CXP80732-011Q)

Pin No.	Pin Name	I/O	Function
1	RF SWP	O	Video switching pulse output
2	Q VD	O	Quasi VD pulse output
3	Q HD ENBL	O	Quasi HD voltage level control
4	AF REC $\overline{\text{P}}$	O	"H" output when hi-fi audio REC
5	RECP	O	"H" output when video REC·PAUSE
6	FE ON	O	Flaying erase ON/OFF (SLV-920HF)
7	REC CTL	O	REC CTL output
8	INT VD	O	Internal VD signal. Not used
9		O	Not used
10		O	Not used
11	NA PB	O	"H" when normal audio playback
12	CAM	O	CAM motor select
13	CW	O	Clockwise/counterclockwise signal output
14	LOAD	O	Loading motor select
15	CIN/REC PRF	I	Erasing protection tab, cassette IN detection input
16	C DOWN	I	Cassette up/down detection input
17	T SENS	I	Take up end sensor input
18	S SENS	I	Supply end sensor input
19	MOD CONT	O	RF modulator ON/OFF control
20	AV CONT	O	Euro connector pin ⑪ control
21	MESECAM	I	ME SECAM input
22	SECAM	I	SECAM input
23	VPB	O	VPB reverse
24	STEP PLS	O	"H" when capstan step drive
25	3.58/4.43 NTSC	O	"L"
26	$\overline{\text{3.58 NTSC}}$	O	"H"
27	$\overline{\text{NTSC}}$	O	"H"
28	E-TAPE	O	"H" when HG tape using
29	BS BILING	O	"H" when BS bilingual. Not used
30	C+CONT	O	CANAL + control.
31		O	Not used
32	END LED	O	END sensor LED drive output
33	CAP TPQ2	O	Capstan current control. "L" when FF/REW ➡ stop
34	CAP TPQ1	O	Capstan current control. "L" when slow down
35	PAL	O	"H"
36	$\overline{\text{FULL ERS}}$	O	"L" when full erase head operation
37	A MUTE	O	Audio MUTE output
38	$\overline{\text{CAP STOP}}$	O	Capstan STOP signal output
39	MP	I	Fixed at "L" level
40	$\overline{\text{COSMO RST}}$	I	System reset inout
41			GND
42	XTAL		System clock 12 MHz
43	EXTAL		
44	$\overline{\text{COSMO CS}}$	I	Chip select signal
45	SI0	I	Signal for serial communication
46	SO0	O	
47	SCLK	I	
48	L METER	O	Not used
49	R METER	O	Not used
50	NTPB SW	I	Not used
51	AF SW POSI	I	VR input for hi-fi switching pulse position adjustment
52	AVss		GND
53	AVREF		AD port reference input. UNSW 5 V
54	AVDD		UNSW 5 V
55	MODE4	I	Mechanism section CAM encoder input
56	MODE3	I	
57	MODE2	I	
58	MODE1	I	
59	DEW	I	DEW sensor input. Not used
60	RF ENV	I	Video RF envelope input
61	AF ENV	I	hi-fi audio RF envelope input
62	RF SW POSI	I	VR input for RF switching position adjustment
63	SREEL FG	I	S reel sensor input
64	TREEL FG	I	T reel sensor input
65	NT JUDGE	I	Not used
66	V SYNC	I	Composite sync input
67	PB CTL	I	Playback CTL input
68	DRM PG	I	Drum PG input
69	DRM FG	I	Drum FG input
70	CAP FG	I	Capstan FG input
71	OSD MUTE	O	"H" when blue back
72		O	Not used
73	CAP D/A	O	Capstan error D/A output
74	DRM D/A	O	Drum error D/A output
75	$\overline{\text{EP}}$	O	"L" when EP mode REC
76	ORC SETTEI	O	"H" when ORC measurement
77	VD CTL	I	Playback CTL input
78	AMS IN	I	Not used
79	LINE1	O	Video/audio input select signal
80	1	O	Expansion port for serial communication
81	SCK1	O	
82	LINE2	O	Video/audio input select signal
83	$\overline{\text{NA REC P}}$	I/O	"H" when recording normal audio
84	CAP RVS	I/O	Capstan reverse signal output
85	HEAD CONT	I/O	Head select control
86		I	Not used
87		O	Not used
88			GND
89			UNSW 5 V
90			Connected to UNSW 5 V
91	$\overline{\text{SP}}$	O	"L" when SP mode
92	ENV GAIN	O	RF envelope gain control
93	CTL STEP	O	CTL amp step control
94	CTL REC	O	CTL amp recording inhibition
95	$\overline{\text{V PB}}$	O	"L" when video playback
96	CTL INDEX	O	CTL amp index control
97	JOG	O	"H" when trick play mode
98	REC	O	Rise up signal of head amp recording power
99	LP HEAD	O	(PAL) Head select control
100	AF SWP	O	hi-fi switching pulse output

6-8. TIMER, TUNER, MODE CONTROL MICROPROCESSOR PIN FUNCTION
(PT-95 BOARD IC401 MB89095-155/MB89096-119)

Pin No.	Pin Name	I/O	Function
1	CL1		Connected to oscillator for clock
2	CL0		Connected to oscillator for clock
3	MOD0		
4	MOD1		
5	X0		Connected to main oscilltor
6	X1		Connected to main oscilltor
7	Vss		
8	$\overline{\text{RESET}}$	I	Reset signal in
9	FF	O	FF LED
10	REW	O	REW LED
11	H-S-REW	O	HI-SPEED REW LED
12	B. LIGHT CONT	O	LCD back light ON/OFF control signal
13			Not used
14	$\overline{\text{LCD CS}}$	O	LCD driver chip select signal
15	$\overline{\text{COSMO RESET}}$	O	System controller reset signal
16	$\overline{\text{CC CS}}$	O	Character generator chip select signal
17	$\overline{\text{POWER FAIL}}$	I	Power failure detect sgnal in
18	$\overline{\text{V SYNC}}$	I	V sync. signal in
19	POWER CONT	O	Power ON/OFF control signal
20	$\overline{\text{COSMO CS}}$	O	System controller chip select signal
21	H DET	I	Video signal detect signal in
22	C+DET	I	CANAL + det. signal in
23	SCL	I/O	I²C bus clock
24	SDA	I/O	I²C bus data
25	$\overline{\text{PAUSE}}$	O	PAUSE LED
26	$\overline{\text{TIMER}}$	O	TIMER RED
27	$\overline{\text{REC}}$	O	REC RED
28	CMOD		
29	TA MUTE	O	Tuner audio mute control signal
30	C+CLK	O	Clock for CANAL + control
31	C+DATA	O	Data for CANAL + control
32	SIRCS IN	I	SIRCS signal in
33	PLL CLOCK	O	Tuner clock signal
34	PLL DATA	O	Tuner data signal
35	PLL ENABLE	O	Tuner enable signal
36	PDC DET	I	PDC det. in
37	$\overline{\text{VPS/PDC RST}}$ (AP. UX. UY. VP) SYS1 (B)	O	VPS, PDC microcomputer reset Tuner system select 1
38	$\overline{\text{VPS/PDC CS}}$ (AP. UX. UY. VP) SYS2 (B)	O	VPS, PDC microcomputer chip select Tuner system select 2
39-52	N. C.		
53	V1dp		
54-57	N. C.		
58	Vss		
59-66	N. C.		
67	Vcc		
68-74	N. C.		
75	$\overline{\text{EDS CS}}$	O	EDS microcomputer chip select
76	POWER CONT 2	O	Power supply control signal for EDS
77	SO BUS	I	Serial data input
78	SI BUS	O	Serial deata output
79	S CLK	O	Clock for serial communication
80	MEM CS	O	E² PROM chip select signal
81	MEM CLK	O	E² PROM clock
82	MEM DATA	O	E² PROM data
83	AVss		
84	AFT	I	Tuner AFT input
85			Not used
86	A/D2	I	Key reading A/D input
87	A/D3	I	Key reading A/D input
88	A/D4	I	Key reading A/D input
89	A/D5	I	Key reading A/D input
90	A/D6	I	Key reading A/D input
91	A/D7	I	Key reading A/D input
92	AVcc		
93	FWD	O	Forward playback LED
94	DEST 1	I	Destination discriminating A/D input
95	DEST 2	I	Destination discriminating A/D input
96	RVS	O	Reverse playback LED
97	–		
98	B. L. LED	O	LCD back light LED control output
99	BUZZER	O	Buzzre out
100	Vcc		

SECTION 7

ADJUSTMENTS

During the adjustment, see the Parts Arrangement Diagram for adjustments on Page 7-7.

7-1. MECHANICAL ADJUSTMENTS

Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT Ⅱ.

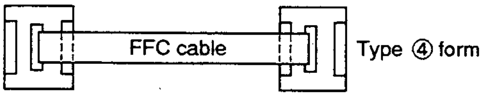
7-2. ELECTRICAL ADJUSTMENTS

2-1. PRE-ADJUSTMENT PREPARATIONS

Necessary items and indications for total adjustment of electric circuit of this machine will be described in this chapter.

2-1-1. Instruments to be Used

1) Color TV
2) Oscilloscope 1 or 2 phenomena, band more than 30 MHz, delay mode, as provided.
3) Frequency counter (min. 8 digits)
4) PAL pattern generator
5) Digital voltmeter
6) Audio level meter
7) Audio generator
8) Attenuator
9) Alignment tape
   Part Code: H7099052H (MH-2)
10) Extension cables (See page 7-2 for using location)


FFC cable
Type ④ form

① CG-20 (CN401) ↔ PT-96 (CN405)
(13 pins J-6090-045-A)
② HF-34 (CN101) ↔ MA-181 (CN406)
(11 pins J-6090-047-A)
③ HF-34 (CN102) ↔ MA-181 (CN405)
(11 pins J-6090-047-A)
④ RV-33 (CN001) ↔ MA-181 (CN303)
(14 pins J-6090-044-A)
⑤ RV-33 (CN002) ↔ MA-181 (CN304)
(20 pins J-6090-043-A)

2-1-2. Connection

Unless otherwise specified, connect and adjust the measuring instruments as shown in the following diagram.

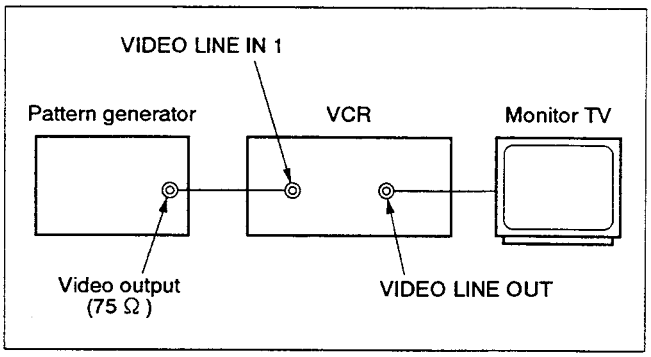

VIDEO LINE IN 1
Pattern generator
VCR
Monitor TV
Video output
(75 Ω)
VIDEO LINE OUT

Fig. 7-2-1.

2-1-3. Set-up Adjustment

In this adjustment, PAL pattern generator is connected with LINE 1 input signal terminal. When check to tuner, connected AERIAL terminal. Check that the amplitudes of video signal SYNC signal, of picture portions, and of burst signals are flat at approximately 0.3, 0.7 and 0.3 V, respectively, and that the level ratio of the burst sigal and "red" signal are 0.30 : 0.66. Fig. 7-2. shows video signals (color bars) used in adjusting the video section.

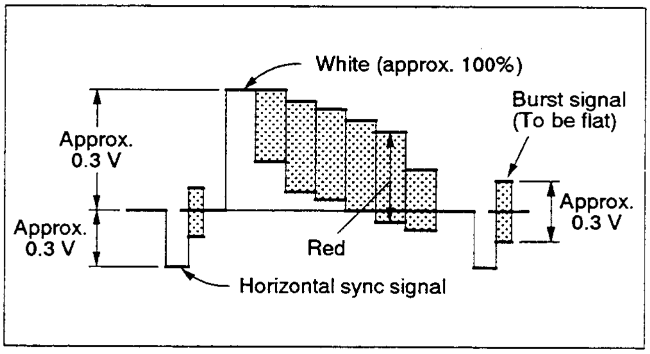

White (approx. 100%)
Burst signal
(To be flat)
Approx.
0.3 V
Approx.
0.3 V
Approx.
0.3 V
Red
Horizontal sync signal

Fig. 7-2-2.

2-1-4. Alignment Tape (MH-2)

	Time	Video signal	Audio signal
1	10 minutes	Stair-step	6 kHz
2	5 minutes	—	3 kHz
3	10 minutes	Color bar	1 kHz
4	3 minutes	RF sweep	—

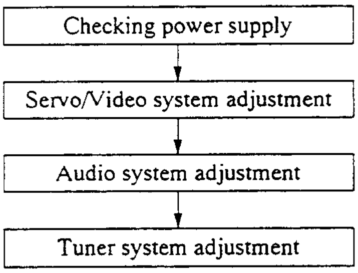
2-1-5. Specified I/O Level and Impedance

Input/output terminal

Video inputs	LINE IN :	phono jack
	EURO-AV :	21-pin (Pin ⑳) 1 Vp-p, 75 Ω, unbalanced, sync negative
Audio inputs	LINE IN :	phono jacks
	47 kΩ, − 7.5 dBs (0 dBs = 0.775 Vrms)	
	EURO-AV :	21-Pin (Pin ② and ⑥) More than 10 kΩ, − 4 dBs
Video outputs	LINE OUT :	phono jack
	EURO-AV :	21-pin (Pin ⑲) 1 Vp-p, 75 Ω, unbalanced, sync negative
Audio outputs	LINE OUT :	phono jacks − 7.5 dBs at load impedance 47 kΩ
	Output impedance :	less than 10 kΩ
	EURO-AV :	21-Pin (Pin ① and ③)
	Output impedance :	less than 1 kΩ − 4 dBs with 10 kΩ load

2-1-6. Adjusting Sequence

Make the electrical adjustment in the following sequence.


Checking power supply
Servo/Video system adjustment
Audio system adjustment
Tuner system adjustment

2-2.POWER SUPPLY CHECK (PT-96 BOARD)

Mode	E-E
Measuring Instrument	Digital voltmater
UNSW 5.0 V check	
Measurement Point	Pin ⑭ of CN401
Specified Value	5.3 ± 0.2 Vdc
MTR 12 V check	
Measurement Point	Pin ⑤ of CN402
Specified Value	12.4 ± 0.5 Vdc
DC 42 V check	
Measurement Point	C187 ⊕ side
Specified Value	42.0 ± 3.0 Vdc
UNSW − 8 V check	
Measurement Point	Pin ⑨ of CN401
Specified Value	− 9.1 ± 0.8 Vdc
AN 12 V check	
Measurement Point	Pin ⑧ of CN401
Specified Value	12.0 ± 0.3 Vdc
SW 9 V check	
Measurement Point	Pin ⑮ of CN401
Specified Value	9.0 ± 0.3 Vdc

Checking Method:

1) Confirm that each voltage meets its specified value.

2-3. SERVO/VIDEO SYSTEM ADJUSTMENT

- **NOTE ON REPAIRING RV-33 BOARD**

  [Servicing Jig]

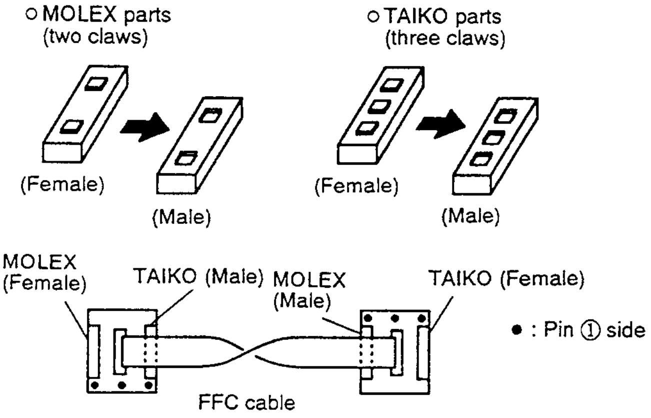
  MA-181 ↔ RV-33 Exension cable.

  ⓐ 14 pins (J-6090-044-A) CN001 ↔ CN303

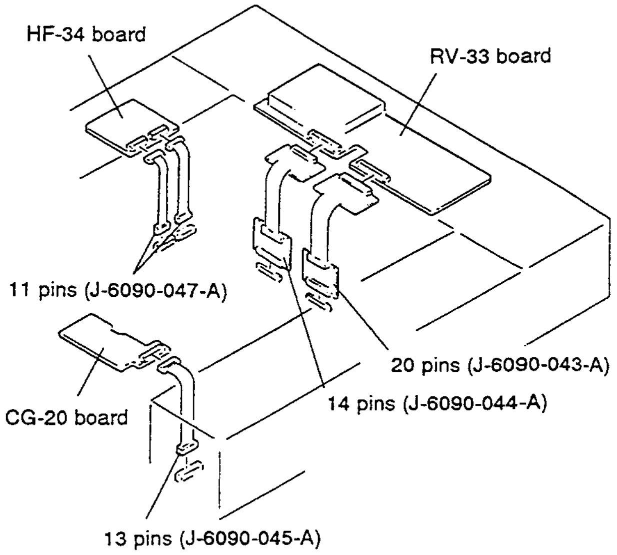
  ⓑ 20 pins (J-6090-043-A) CN002 ↔ CN304

① There are two types of the connectors between MA-181 and RV-33 boards according to the manufacturing companies (TAIKO or MOLEX). They are not interchangeable.

② Servicing jigs are for common use.
When using it, please be sure to confirm the form of connectors.


○ MOLEX parts
(two claws)
○ TAIKO parts
(three claws)
(Female)
(Male)
(Female)
(Male)
MOLEX
(Female)
TAIKO (Male)
MOLEX
(Male)
TAIKO (Female)
● : Pin ① side
FFC cable

- EXTENSION CABLE USING LOCATION
  (See page 7-1 for details of extension cables.)


HF-34 board
RV-33 board
11 pins (J-6090-047-A)
20 pins (J-6090-043-A)
14 pins (J-6090-044-A)
CG-20 board
13 pins (J-6090-045-A)

2-3-1. Switching Position Adjustment (MA-181 Board)

Purpose:

Adjust the interval between A ch and B ch of tape playback output.

Improve the interchangeability with other tapes and sets.

When it is out of order, the interval appears on the screen, the screen is disturbed.

Mode	PB
Signal	Alignment tape
Measurement Point	CH1: CJ701 VIDEO LINE OUT (IO-50 board) CH2: Pin ⑳ of CN304 (RF SWP)
Measuring Instrument	Oscilloscope
Adjusting Element	RV202
Specified Value	6.5 ± 0.5 H (416 ± 32 μsec)

Adjusting Method:

1) Adjust the tracking position to the center by pushing tracking buttons ▲, ▼ (on remote commander).
2) Check that switching position is 6.5 ± 0.5 H. (416 ± 32 μsec)
If not meet the specified value, turn RV202 and repeat steps 1) to 2).

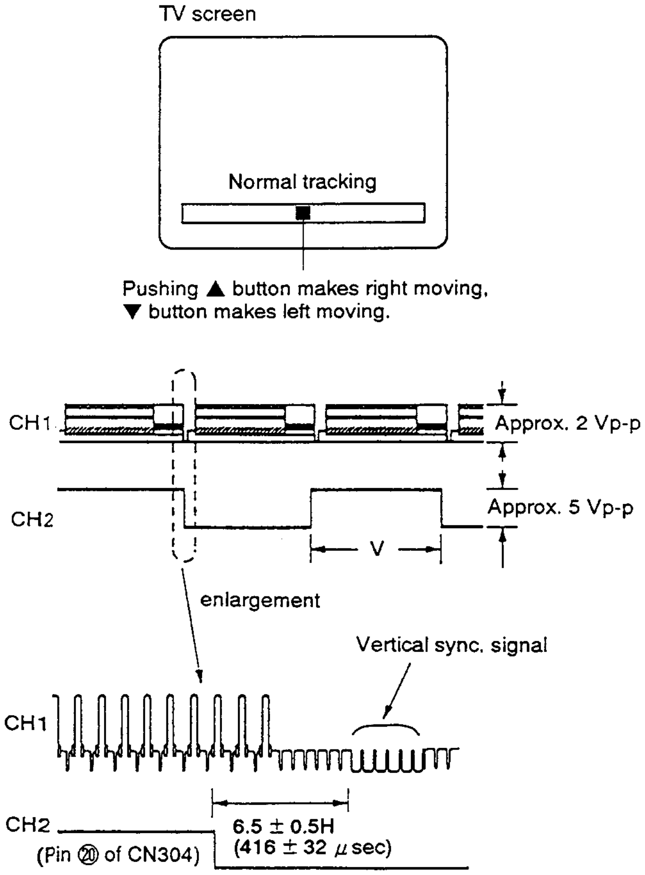

TV screen
Normal tracking
Pushing ▲ button makes right moving,
▼ button makes left moving.
CH1
Approx. 2 Vp-p
CH2
Approx. 5 Vp-p
V
enlargement
Vertical sync. signal
CH1
CH2
(Pin ⑳ of CN304)
6.5 ± 0.5H
(416 ± 32 μsec)

Fig. 7-2-4.

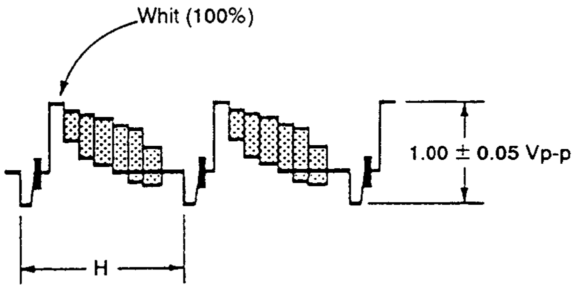
2-3-2. Sync AGC Adjustment (RV-33 Board)

Mode	E-E
Signal	Color bar
Measurement Point	CJ701 VIDEO LINE OUT (IO-50 board)
Measuring Instrument	Oscilloscope
Adjusting Element	RV001
Specified Value	1.00 ± 0.05 Vp-p

Note : VIDEO LINE OUT terminal must be terminates at 75Ω.

Adjusting Method:

1) With RV001, adjust the VIDEO signal level to 1.00 ± 0.05 Vp-p


Whit (100%)
1.00 ± 0.05 Vp-p
H

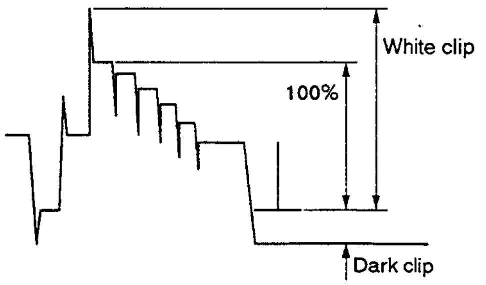
2-3-3. White Clip Adjustment (RV-33 Board)

Purpose:

Adjust the frequency of FM modulated YFM signal doesn't go too high.

When it is out of order, white goes flat and black is over-modulated.

Signal	Color bar
Measurement Point	Pin ㊺ of IC001
Measuring Instrument	Oscilloscope
Adjusting Element	RV004
Specified Value	White clip and dark clip are equal to the reference waveform.

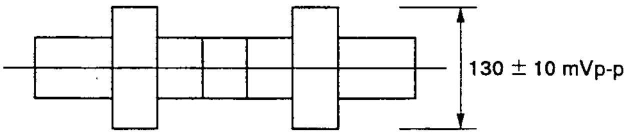

White clip
100%
Dark clip

2-3-4. Recording Chroma Adjustment (RV-33 Board)

Purpose:

Adjust recording chroma level.
When it is out of order, S/N ratio of color goes bad, the picture is not colored and second sequence beat appears.

Mode	E-E
Signal	Color bar
Measurement Point	Q013 Emitter
Measuring Instrument	Oscilloscope
Adjusting Element	RV009
Specified Value	130 ± 10 mVp-p



Reference:

Adjusting level is low; Bad color S/N ratio, not colored.
Adjusting level is high; Second sequence beat (squared noise) appears.

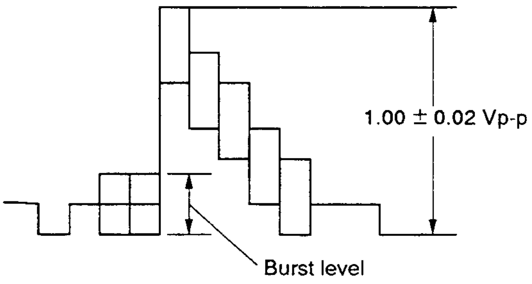
2-3-5. Playback Level Adjustment (RV-33 Board)

Purpose:

Adjust playback video signal level to the specification.
When it is out of order, the picture is darkened or brightened on TV screen. White goes flat.

Mode	Playback
Signal	Color bar or alignment tape
Measurement Point	VIDEO LINE OUT
Measuring Instrument	Oscilloscope
Adjusting Element	RV003
Specified Value	1.0 ± 0.02 Vp-p

Note : Video Output terminal must be terminated at 75Ω.



Reference:

Adjusting level is low; The picture is darkened on TV screen.
Adjusting level is high; The picture is brightened on TV screen. White goes flat.

2-3-6. Carrier Deviation Adjustment (RV-33 Board)

Purpose:

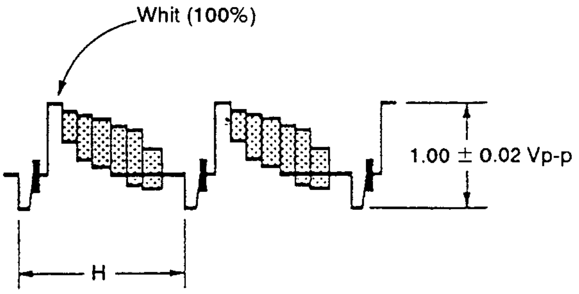
Adjust FM modulating frequency for signal.
When it is out of order, black and white are over-modulated, interchangeability is lack, the screen is darkened or brightened or off.
This adjustment should be done after checking 2-3-5. Playback Level Adjustment is satisfied.

Carrier Set	
Mode	E-E
Signal	None
Measurement Point	Emitter of Q034
Measuring Instrument	Frequency Counter
Adjusting Element	RV006
Specifed Value	3.80 ± 0.05 MHz
Deviation	
Mode	REC. PB
Signal	Color bar
Measurement Point	VIDEO LINE OUT
Measuring Instrument	Oscillosope
Adjusting Element	RV005
Specifed Value	1.00 ± 0.02Vp-p

Note : Video Output terminal must be terminated at 75Ω.

Adjusting Method:

1) Set to E-E mode in the no signal condition.
2) Connect frequency counter to emitter of Q034, and adjust with RV006 so that the reading on frequwncy counter goes 3.80 ± 0.05 MHz.
3) Feed the color bar signal and record it.
4) Playback the recorded signal and sheck the signal at VIDEO LINE OUT goes 1.00 ± 2.00 Vp-p with oscilloscope.
5) When it is out of order, adjustment it with RV005.
6) Repeat items 4) and 5) fill the specification is satisfied.



2-3-7. VCO Adjustment (RV-33 Board)

Purpose:

Adjust to lock the color surely.
When it is out of order, the picture doesn't colored.

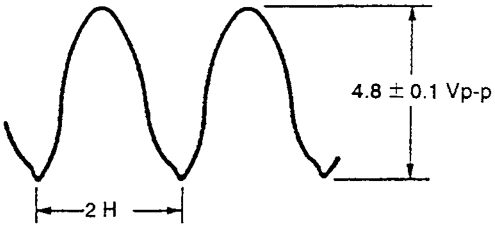
Mode	PB
Signal	Color bar
Measurement Point	Pin (55) of IC001
Measuring Instrument	Digital voltmeter
Adjusting Element	T001
Specified Value	2.5 ± 0.1 Vdc

2-3-8. SECAM Discrimination Adjustment (RV-33 Board) (SLV-E80B only)

Mode	E-E
Signal	SECAM Color bar
Measurement Point	Pin ⑪ of IC201
Measuring Instrument	oscilloscope
Adjusting Element	RV201
Specified Value	4.8 ± 0.1 Vp-p

Adjusting Method:

1) Adjust RV201 so that the amplitude of 1/2 fh waveform becames 4.8 ± 0.1 Vp-p.



2-4. AUDIO SYSTEM ADJUSTMENTS

- Adjust both Lch and Rch.

[Connection]

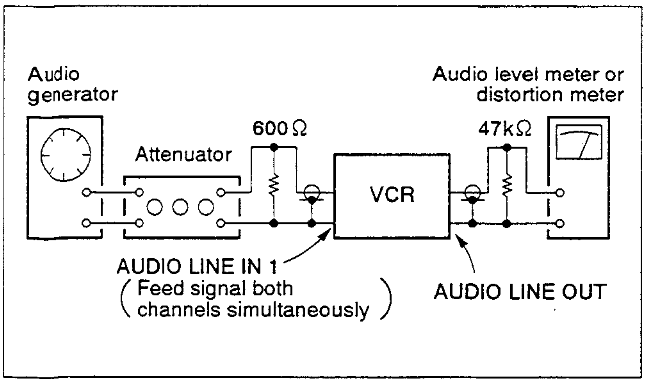

Audio generator
Audio level meter or distortion meter
600Ω
Attenuator
47kΩ
VCR
AUDIO LINE IN 1
(Feed signal both channels simultaneously)
AUDIO LINE OUT

Fig. 7-2-5.

2-4-1. Hi-Fi Audio System Adjustment

- Set switches and knobs to the following positions to make adjustment unless otherwise specified.
  INPUT SELECT switch ·········· LINE 1
  AUDIO MONITOR ················ STEREO

[Adjusting Sequence]

1. VCO fo adjustment
2. Deviation check
3. BPF fo adjustment
4. AF switching position

1. VCO fo Adjustment (HF-34 Board)

Purpose:

Adjust to have interchangeability in HiFi audio.
When it is out of order, the sound is distorted.

Mode	REC
Signal	No signal
Measuring Instrument	Frequency counter
1.4 MHz Adjustment	
Measurement Point	Pin ⑲ of IC101
Adjusting Element	RV103 (R CH)
Specified Value	1.4 MHz ± 1 kHz
1.8 MHz Adjustment	
Measurement Point	Pin ㉚ of IC101
Adjusting Element	RV102 (R CH)
Specified Value	1.8 MHz ± 1 kHz

Note: Connect the frequency counter through a probe of high input impedance (more than 1 MΩ) and low capacity (10 pF or less).

Adjusting Method:

1) Connect the frequency counter to each measurement point.
2) Adjust each volume so that each frequency meets its specified value.

2. Deviation Check (HF-34 Board)

Purpose:

Set the HiFi audio signal level to specified value.
Adjust to have interchangeability with other tapes and sets.
When it is out of order, the volume of sound is different on playback.

Mode	REC
Signal	Pins ①, ③ 400 Hz − 12 dBs
Measurement Point	IC101 L CH Pin ⑲ R CH Pin ㉚
Measurement Equipment	Frequency counter
Specified Value	50 ± 5 kHz

3. BPF fo Adjustment (HF-34 Board)

Purpose:

Adjust to separate carrier component precisely and to operate normally the filter for cutting video signal.
When it is out of order, the sound is distorted.

Mode	PB
Signal	1.608 MHz Input 200 mVp-p : Pin ① of CN103
Measurement Point	Pin ⑲ of IC101 Pin ㉚ of IC101
Measuring Instrument	Oscilloscope
Adjusting Element	RV101

Connection:

1) Remove HF-34 board from CN103, and feed 1.608 MHz, 200 mVp-p sine wave to Pin ① of CN103.

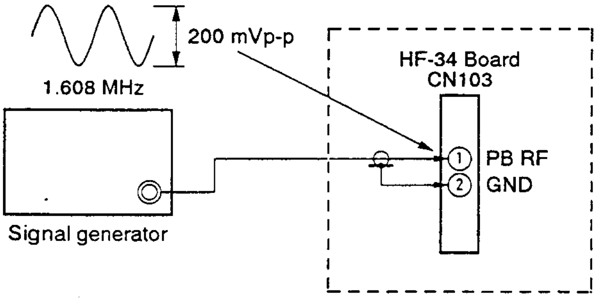

200 mVp-p
1.608 MHz
Signal generator
HF-34 Board
CN103
① PB RF
② GND

Fig. 7-2-6.

Adjusting method:

1) Turn RV101 counterclockwise seen from the component side.
2) Turn RV101 clockwise gradually and stop turning when the level Ⓐ becomes equal to the level Ⓑ.

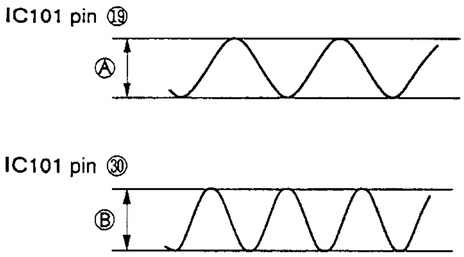

IC101 pin ⑲
Ⓐ
IC101 pin ㉚
Ⓑ

Fig. 7-2-7.

4. AF Switching Position Adjustment (MA-181 Board)

Adjust the interval between A CH and B CH of tape playback output. Improve the interchangeability with other tapes and sets.
When it is out of order, noisy sound is increased and big noise is heard.

Mode	PB
Signal	Alignment tape
Measurement Point	CH1: See Fig. 7-2-8 (HF-34 Board) CH2: Pin ③ of CN802 (RV-33 Board)
Measuring Instrument	Oscilloscope
Adjusting Element	RV201
Specified Value	Fig. 7-2-9

Measure between the big land and the small land near the both sides of CN103 on the component side of HF-34 board.

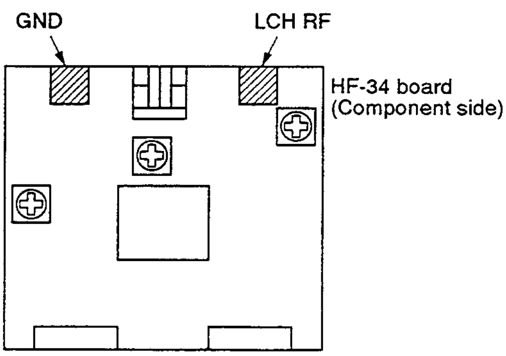

GND
LCH RF
HF-34 board
(Component side)

Fig. 7-2-8.

Adjusting method:

1) Adjust the tracking position to the center by pushing tracking buttons ▲, ▼ (on remote commander). (Auto tracking: OFF)
2) Adjust RV201 to minimize dropout.

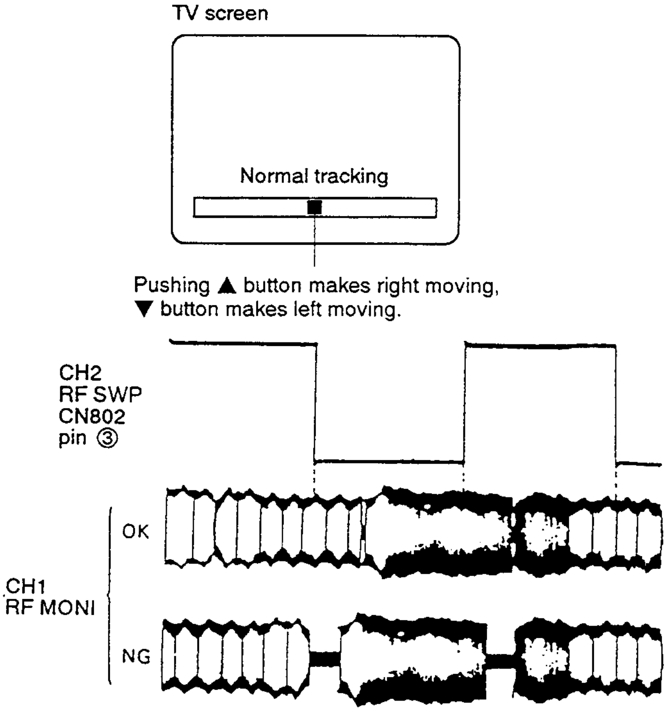

TV screen
Normal tracking
Pushing ▲ button makes right moving,
▼ button makes left moving.
CH2
RF SWP
CN802
pin ③
OK
CH1
RF MONI
NG

Fig. 7-2-9.

2-4-2. Normal Audio System Adjustment

- Make adjustment in the SP mode, unless otherwise specified. Use a normal VHS cassette for an adjustment tape.
- Set AUDIO MONITOR to normal.

1. ACE Head Adjustment

Refer to the service manual of VHS MECHANICAL ADJUSTMENT Ⅱ.

2. Recording Bias Adjustment (MA-181 Board)

Mode	REC and PB
Signal	400 Hz, − 30 dBs 7 kHz, − 60 dBs
Measurement Point	AUDIO LINE OUT L or R
Measuring Instrument	Audio level meter
Adjusting Element	RV851
Specified Value	0 ± 1 dB

Adjusting Method :

1) Supply a signal of 400Hz, − 30 dBs to Audio Line Input.
2) Connect the audio level meter to the Audio Line Output.
3) Adjust the attenuator so that the audio level meter will indicate − 30 dBs.
4) Make recording in the SP mode.
5) Set an audio line input signal to 7 kHz and make recording.
6) Playback a recorded portion, and mesure output levels at 400 Hz and 7 kHz.
7) Confirm that the 7 kHz playback output levels within a range of the 400 Hz playback output level 0 ± 1 dB. When beyond this range, sdjust RV851 and repeat the steps 1) through 7) above.

2-5. TUNER SYSTEM ADJUSTMENT

2-5-1. Receive Separation Adjustment (TU-146 Board)

(SLV-E80NC/NP)

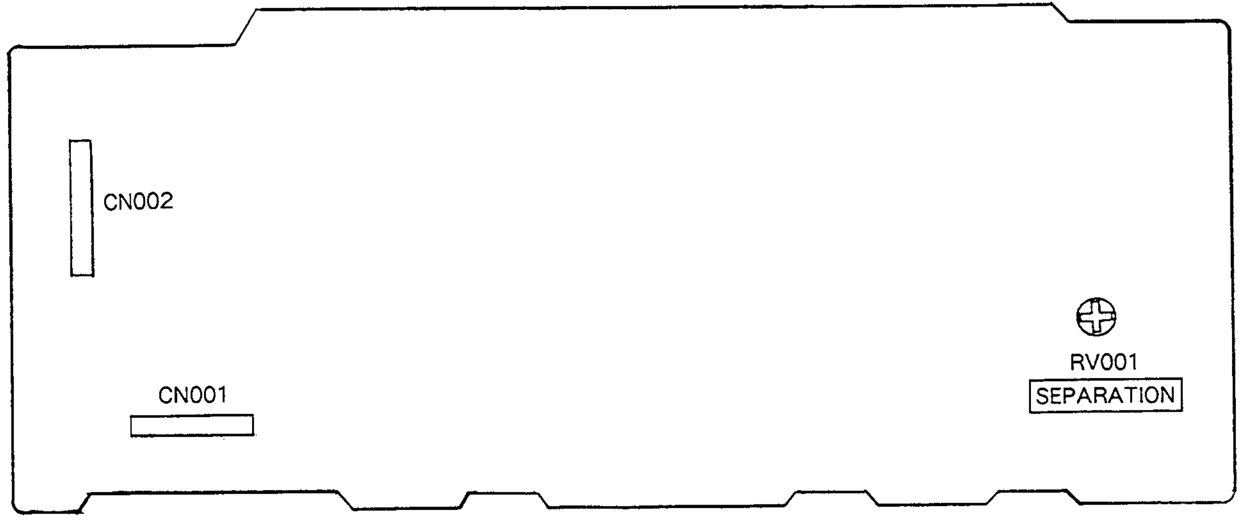
Signal	Stereo Lch: No modulation Rch: 1 kHz Modulation: 100%
Connection Point	AUDIO LINE OUT L
Measuring Instrument	Oscilloscope
Adjusting Element	RV001

Adjusting method:

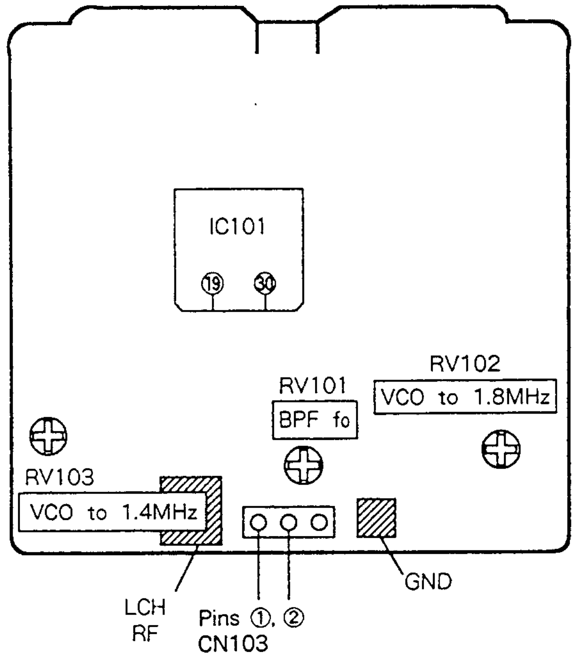
1) Set the sound multiplex signal generator in the Stereo mode, and set Lch to 400 Hz and Rch to 1 kHz, 100% modulation.
2) Connect the oscilloscope to the Lch of Audio Line Output.
3) Adjust RV001 to minimize Rch (1 kHz) output.
   When this is done, do not fully turn RV001.
   (The "STEREO" indication must be illuminated.)

2-6. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS

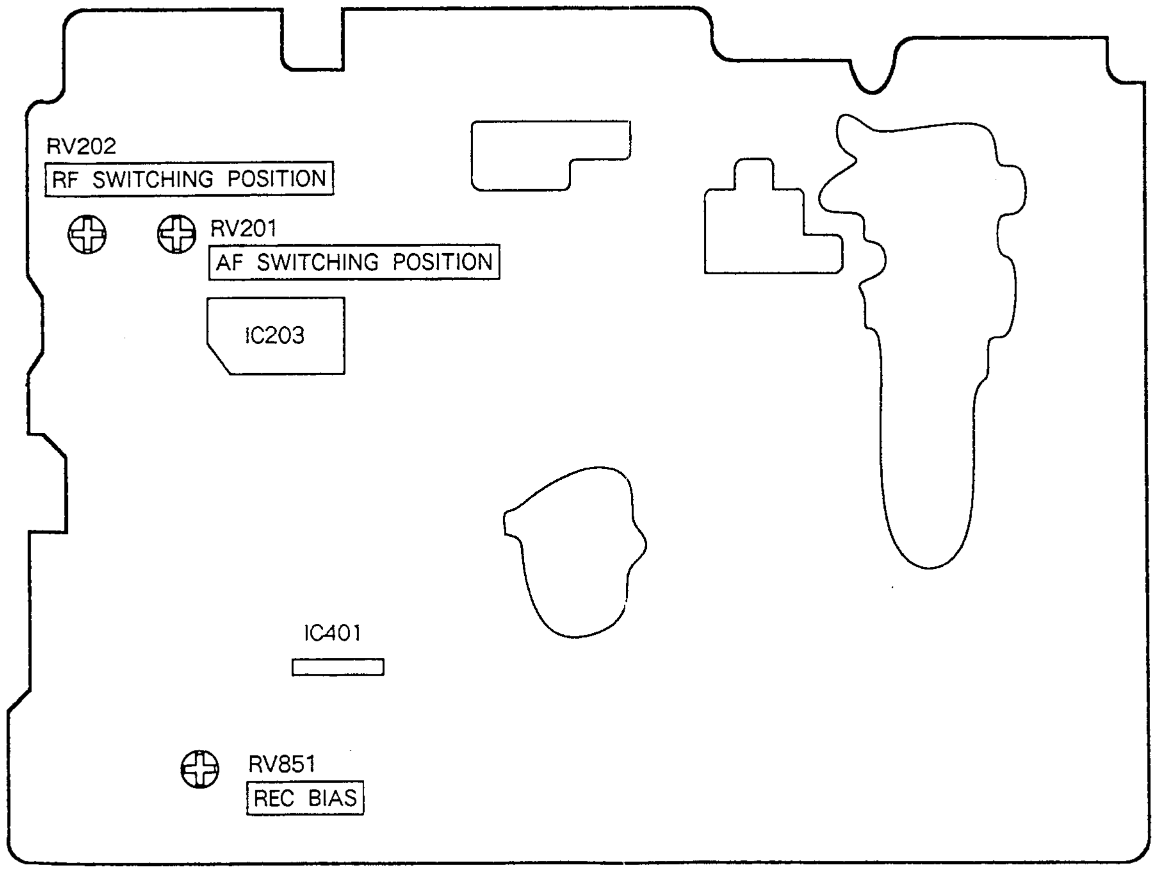
TU-146 BOARD (CONDUCTOR SIDE)



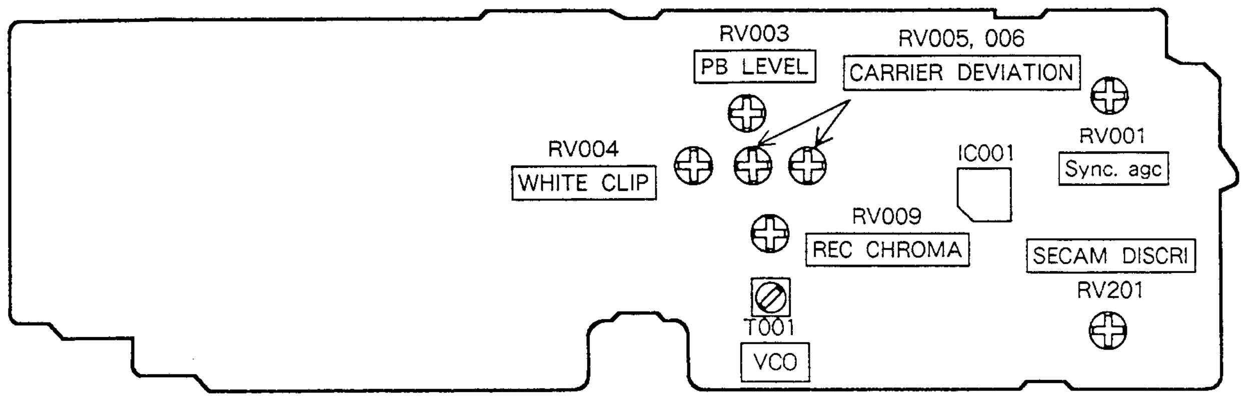
HF-34 BOARD (COMPONENT SIDE)


IC101
⑲
㉚
RV102
VCO to 1.8MHz
RV101
BPF fo
RV103
VCO to 1.4MHz
LCH
RF
Pins ①, ②
CN103
GND

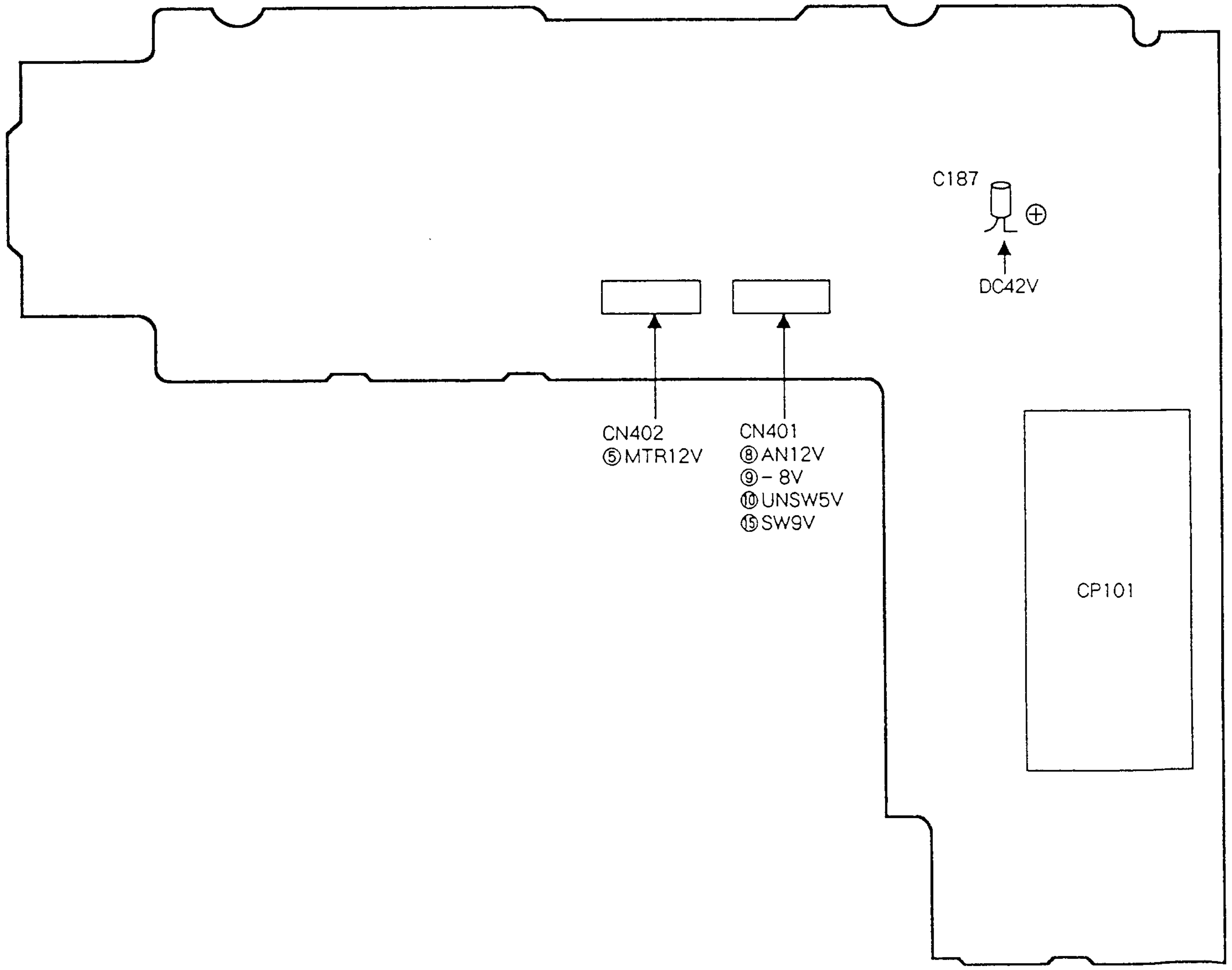
MA-181 BOARD (CONDUCTOR SIDE)


RV202
RF SWITCHING POSITION
RV201
AF SWITCHING POSITION
IC203
IC401
RV851
REC BIAS

RV-33 BOARD (COMPONENT SIDE)

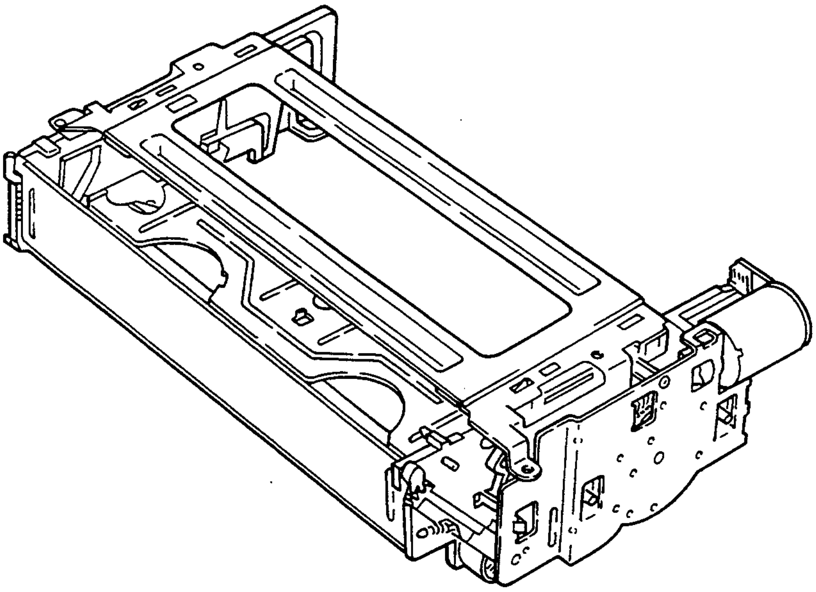

RV003
PB LEVEL
RV005, 006
CARRIER DEVIATION
RV001
Sync. agc
RV004
WHITE CLIP
IC001
RV009
REC CHROMA
SECAM DISCRI
RV201
T001
VCO

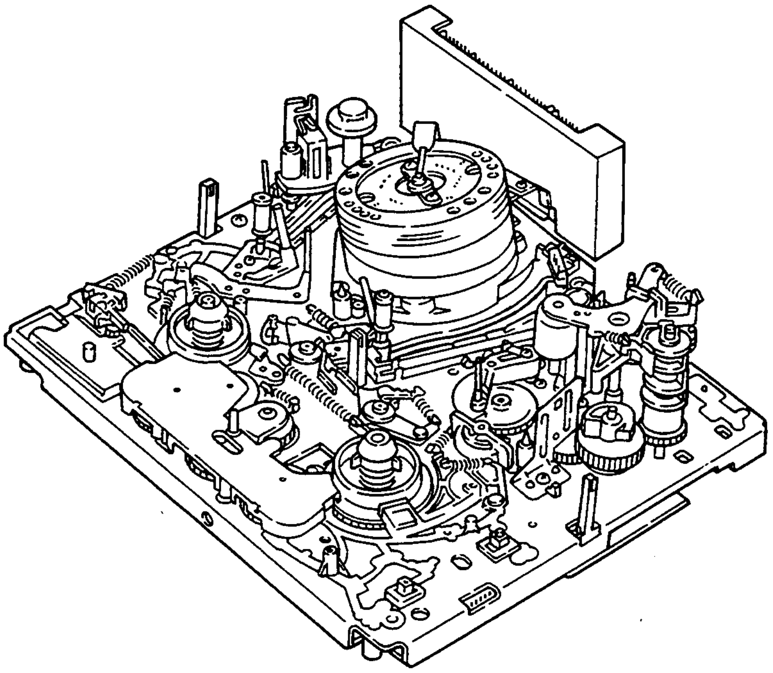
PT-96 BOARD (CONDUCTOR SIDE)


C187
⊕
DC42V
CN402
⑤MTR12V
CN401
⑧AN12V
⑨– 8V
⑩UNSW5V
⑮SW9V
CP101

VHS MECHANICAL ADJUSTMENT MANUAL II

- Please use in conjunction with the SERVICE MANUAL
- This VHS MECHANICAL ADJUSTMENT MANUAL II can be used for NTSC system and PAL system.





VHS VIDEO RECORDER

SONY®

MICROFILM

TABLE OF CONTENTS

Section *Title* *Page*

1. PREPARATIONS FOR CHECKS, ADJUSTMENTS AND REPLACEMENT OF THE DECK MECHANISM

1-1. Loading and unloading video cassettes with the power off 3
  1-1-1. Manual loading and unloading 3
  1-1-2. Loading and unloading using a separate power source 3
1-2. Threading and unthreading with the power off 3
  1-2-1. Manual threading and unthreading 3
  1-2-2. Threading and unthreading using a separate power source 3
1-3. To complete threading with the FL cassette controller removed 4

2. PERIODICAL INSPECTION AND REPLACEMENT

2-1. Cleaning the rotary head disc ass'y 5
2-2. Cleaning the tape transport system 5
2-3. Cleaning the drive system 5
2-4. Periodic Maintenance 6
2-5. Service Tools and Jigs 7

3. REPLACEMENT OF MAJOR COMPONENT PARTS OF THE DECK MECHANISM

3-1. FL mechanism 8
  3-1-1. FL door 8
  3-1-2. Erasure protection lever 8
  3-1-3. Gear cover ass'y 8
  3-1-4. Loading motor, worm gear (FL), worm wheel (FL), worm bearing 8
  3-1-5. Door OPEN/CLOSE arm 9
3-2. TS ass'y and guide roller ass'y No.2 9
3-3. ACE ass'y 10
3-4. Drum ass'y 10
3-5. Drum base ass'y 10
3-6. Pinch roller ass'y and elevator cam 11
3-7. Cam gear, press and transmission gear 11
3-8. RVS arm ass'y and RVS cam gear 12
3-9. Guide No.7 12
3-10. S-brake ass'y, T-brake ass'y 13
3-11. T-soft brake ass'y, REV brake arm 13
3-12. S-soft brake arm ass'y 13
3-13. S-guide and T-guide roller assy's 14
3-14. Reel lock release and REW gear 14
3-15. Tension regulator arm ass'y, tension regulator band ass'y 15
3-16. S take-up ass'y 15
3-17. S-reel ass'y 16
3-18. T-reel ass'y 16
3-19. Pendulum arm ass'y 16
3-20. Relay gear 17
3-21. Adjuster arm ass'y 17
3-22. CAP brake ass'y 17
3-23. Capstan motor 18
3-24. Rotary switch 18
3-25. RKB cam gear 19
3-26. Sub-chassis ass'y 19
3-27. Pendulum slide plate, pendulum arm 20
3-28. The limiter arm and limiter slide plate 20
3-29. Cam motor 20
3-30. Cam gear 20
3-31. Tension regulator arm, S take-up arm 21
3-32. Mode slide plate, RVS relay gear 21
3-33. Brake arm, brake slide plate 21
3-34. Right shuttle, right loading gear ass'y 22
3-35. Left shuttle ass'y, left loading gear ass'y 22
3-36. C-roller arm ass'y, C-roller release lever 23

4. ADJUSTMENT

4-1. Tape path adjustment
  4-1-1. Tension regulator position/tension adjustement 24
  4-1-2. Height adjustment of the guide roller No.2 25
  4-1-3. Height adjustment of guide roller No. 7 and the RVS arm 25
  4-1-4. Height adjustment of guide rollers No.3 and No.6 26
  4-1-5. ACE head ass'y adjustment (rough adjustment) 26
  4-1-6. ACE head assembly adjustment (precision adjustment) 27
  4-1-7. X-value adjustment 27
  4-1-8. Adjustments after replacing the drum (video head) 29
  4-1-9. Checking the tension and torque 31

1. PREPARATIONS FOR CHECKS, ADJUSTMENTS AND REPLACEMENT OF THE DECK MECHANISM

Note : Refer to "Replacement Method" in the Service Guide for instructions on replacing the cabinet and PC boards. DO not perform cassette loading or threading with the VCR positioned upside-down.

1-1. LOADING AND UNLOADING VIDEO CASSETTES WITH THE POWER OFF. (Fig. 1-1.)

1-1-1. Manual loading and unloading

1) Rotate the loading motor in the direction of arrow Ⓐ until loading is compleated.
(When unloading, rotate the loading motor in the direction of arrowⒷ.)

1-1-2. Loading and unloading using a separate power source.

1) Cassette loading is performed by applying approx. 10V (300 mA) to the power terminal of the loading motor using a stabilized DC power source.
(When unloading, apply the same voltage to the opposite polarity of the power terminal.)

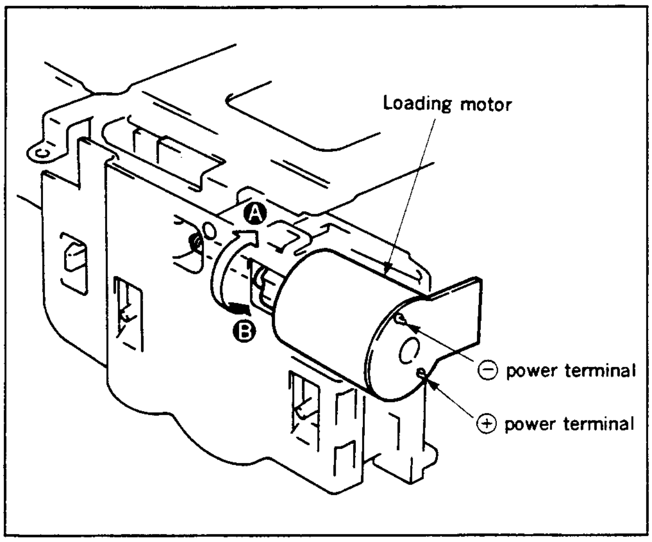


Fig. 1-1.

1-2. THREADING AND UNTHREADING WITH THE POWER OFF. (Fig. 1-2)

1-2-1. Manual threading and unthreading

1) Rotate the cam motor ❶ in the direction of arrowⒶuntil threading is completed.
(When unthreading, rotate the cam motor ❶ in the direction of arrowⒷ.)

1-2-2. Threading and unthreading using a separate power source.

1) Threading is performed by applying approx. 10V (500 mA) to the power terminal for the cam motor ❶ using a DC stabilized power source.
(When unthreading, apply the same voltage to the opposite polarity of the power terminal.)

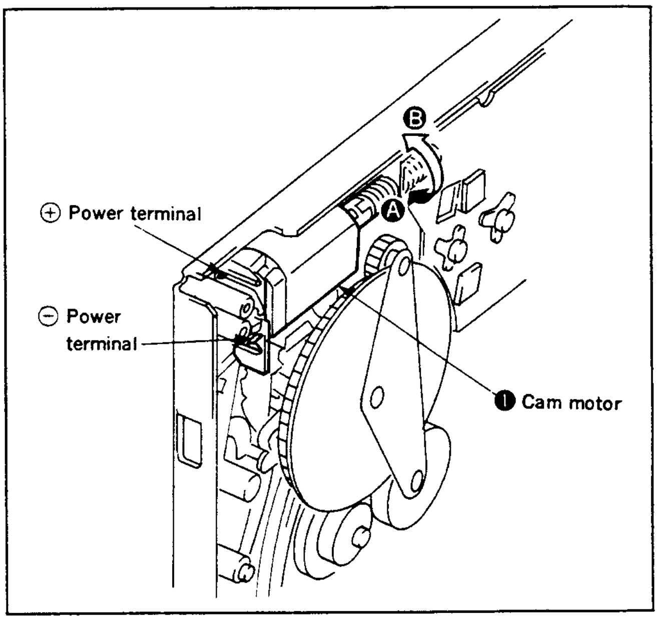


Fig. 1-2.

1-3. TO COMPLETE THREADING WITH THE FL CASSETTE CONTROLLER REMOVED. (Fig. 1-3)

1) Unplug the AC power cord from the power outlet.
2) Shield the supply, take-up sensors and the LED with black-masking tape.
3) Hold the cassatte down switch depressed by taping it, etc.
4) Plug the AC power cord into a power outlet.
   (At this time, the power should turn on and the tape rewinds for approx. 10 seconds, and the power turns off.)
5) Turn the power switch ON so that the mechanism is ready for loading.

Note : In this condition, the VTR is ready to operate in the different operating modes, including the record mode. At this time, rewind the tape for at least 15 seconds, then perform fast forward (FF).

Note : Following the above, be sure to reset the mechanism to the previous state as outlined below.

1) Remove the black-masking tape shielding the supply and take-up sensors, the LED and the tape holding cassette down switch.
2) Unplug the AC power cord from the power outlet to reset the system control microprocessor.

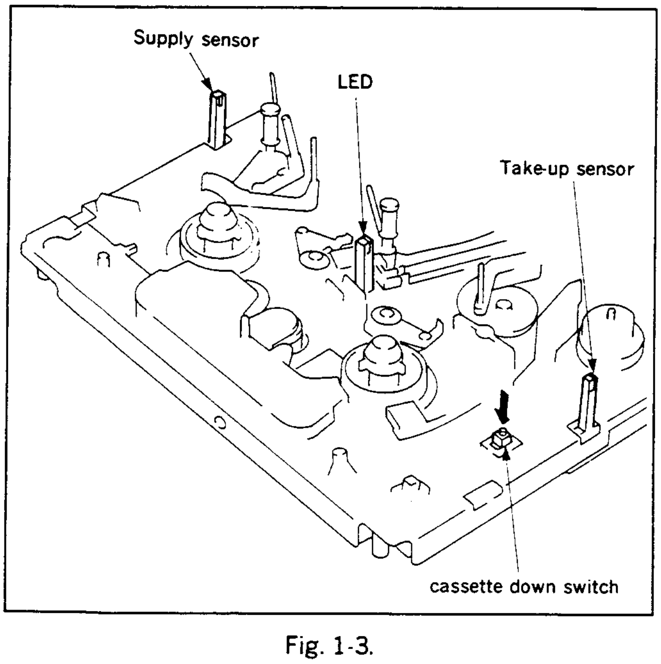


Fig. 1-3.

2. PERIODICAL INSPECTION AND REPLACEMENT

We recommend performing the following periodical inspections and maintenance in order to ensure that the unit operates in top condition and offers full performance, as well as realizes a long life of the mechanism and tapes.

* Be sure to perform the following maintenance procedures after the unit is repaired (regardless how long the unit has been used.)

2-1. CLEANING THE ROTARY HEAD DISC ASS'Y

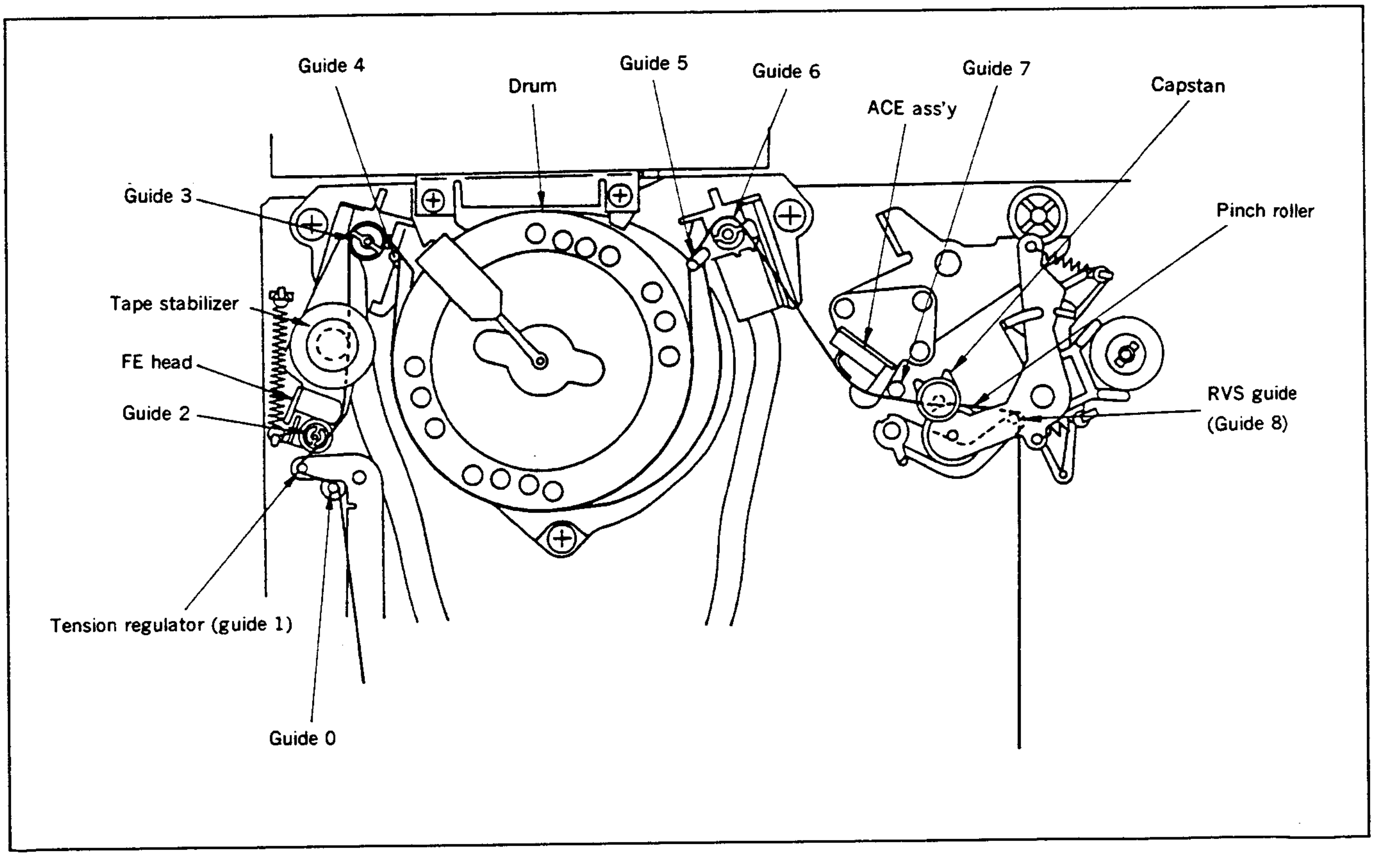
1) Press Attach a deer skin cloth (Jig. Ref. No. J-7) soaked in cleaning solution (Jig. Ref. No. J-5) lightly to the rotary drum ass'y, then turn the rotary head disc slowly by hand to clean the surface of the rotary drum ass'y. (At this time, do not turn on the power motor to rotate the rotary head disc for cleaning.)
2) Also, do not wipe the drum ass'y by moving the deer skin cloth vertically across the head as this could damage of the tip of the head.

2-2. CLEANING THE TAPE TRANSPORT SYSTEM

1) Clean the tape transport surfaces (tape guide, a drum ass'y surfaces, capstan, pinch roller, etc.) with a deer skin cloth soaked in an approved in the recommended cleaning solution.

2-3. CLEANING THE DRIVE SYSTEM

1) Wipe the drive mechanism with an ordinary cloth soaked in an approved cleaning solution.



Guide 4
Drum
Guide 5
Guide 6
Guide 7
ACE ass'y
Capstan
Guide 3
Pinch roller
Tape stabilizer
FE head
Guide 2
RVS guide
(Guide 8)
Tension regulator (guide 1)
Guide 0

Fig. 2-1.

2-4. PERIODIC MAINTENANCE

Location of Maintenance and Check		User Hours Replacement Part No.	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	Remarks
Perfor mance Check	Clean tape running surfaces	——	○	○	○	○	○	○	○	○	○	○	Always perform after repair.
	Clean, degauss ACE ass'y	——	○	○	○	○	○	○	○	○	○	○	
	Clean, degauss video disc ass'y	——	○	○	○	○	○	○	○	○	○	○	Head life is greatly affected by environment and method of use.
Driving System	Reel belt	3-736-013-01	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Always perform after repair.
Tape Running System	Abnormal noise	——	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Adjust or replace source of abnormal noise.
	Back tension measurement	——	–	☆	–	☆	–	☆	–	☆	–	☆	Check according to 4-1-1. Spec : 24 — 34g/cm (Measured with torque cassette)
	Brake system check	——	–	☆	–	☆	–	☆	–	☆	–	☆	
	REC/PB function check	——	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Always perform after repair.
	Forward torque measurement		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Spec : 80 — 140 g•cm

○ Cleaning ☆ Check

Note : Refer to the above items for part replacement when performing an overhaul.

2-5. SERVICE TOOLS AND JIGS

Ref. No.	Description	Part No.	Printing on jig	Remarks
J-1	Master plane	H-7099-279-H		
J-2	Reel disc height jig	H-7099-038-H		
J-3	Torque gauge adapter	H-7099-035-H		
J-4	Torque gauge	H-7099-039-H		
J-5	0.93mm Allen wrench	H-7099-202-H		
J-6	NTSC torque cassette VHT-063S PAL torque cassette	J-6082-011-A J-6082-066-A		For rewind torque and back tension
	NTSC torque cassette VHT-404S PAL torque cassette	J-6082-012-A J-6082-067-A		For cue/review
J-7	NTSC alignment tape JVC-MH-1 PAL alignment tape JVC-MH-2	H-7099-046-H H-7099-052-H		
	NTSC Hi-Fi alignment tape PAL Hi-Fi alignment tape	H-7099-153-H H-7099-175-H		
J-8	Cleaning fluid	Y-2031-001-0	———	
J-9	Chamois cloth	2-034-697-00	———	Cleaning
J-10	Head degausser	Widely available	———	Video, audio head degaussing
J-11	Small adjustment mirror (with handle) Small adjustment mirror (mirror only)	J-6080-029-A J-6080-030-1	SL-5052	For tape path and tape running adjustment and check

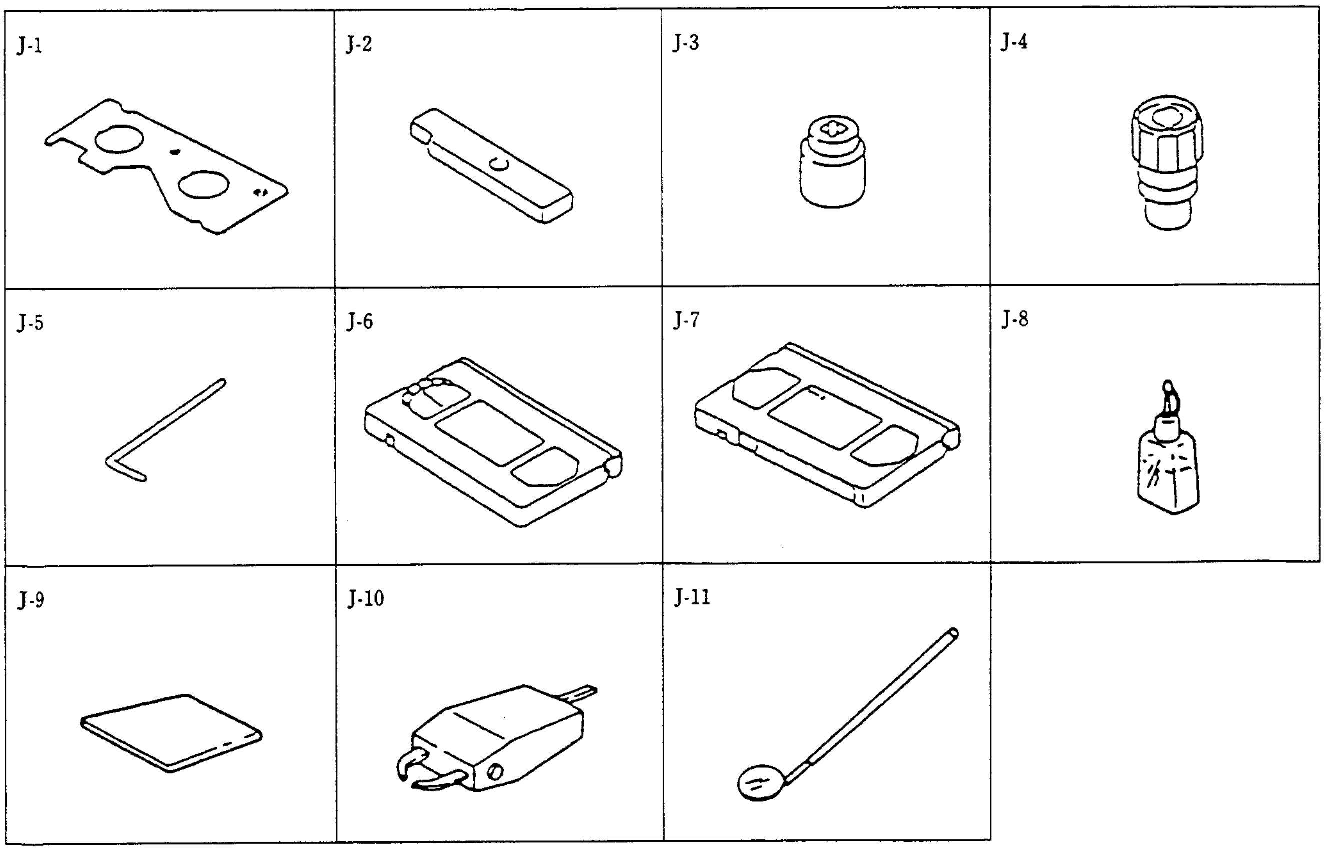


Fig. 2-2. Service tools and jigs

3. REPLACEMENT OF MAJOR COMPONENT PARTS OF THE DECK MECHANISM

Note:
- ○ Refer to "Replacement Method" in the Service Guide for replacing the cabinet and PC boards.
- ○ When mounting parts, reverse the replacement procedure while referring to "Precautions on Mounting Parts".
- ○ After grease coated parts such as gears are replaced, re-grease the replaced part.
- ○ Do not touch the guides (taped surface) and brake shoe directly with your fingers or grease them, etc.
- ○ Gears must be mounted so that they mesh with each other.

3-1. FL MECHANISM

3-1-1. FL door (Fig. 3-1.)

1) Press the claw ❶ in the direction of arrow Ⓐ, then remove the FL door ❷ in the direction of arrow Ⓑ.

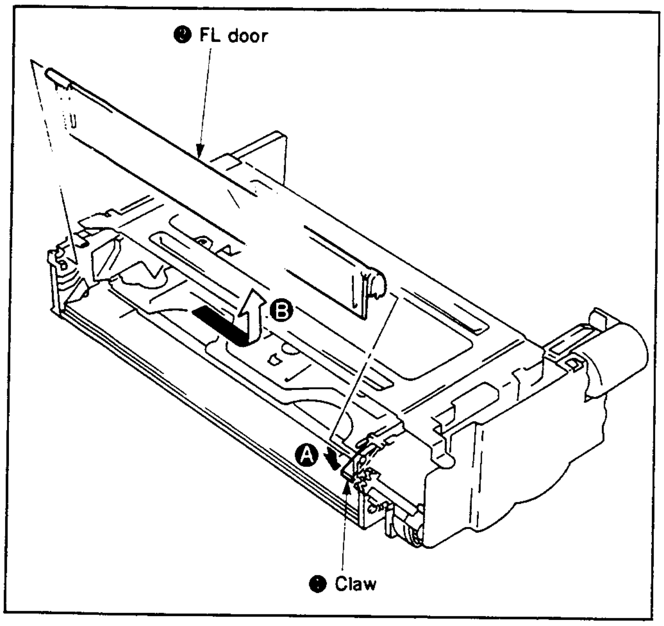

❷ FL door
Ⓑ
Ⓐ
❶ Claw

Fig. 3-1.

3-1-2. Erasure protection lever (Fig. 3-2)

1) Remove the spring ❶.
2) Disengage the claw ❷, then slide the erasure protection lever ❸ in the direction of arrow Ⓐ.
3) Disengage the erasure protection lever ❸ in the direction of arrow Ⓑ.

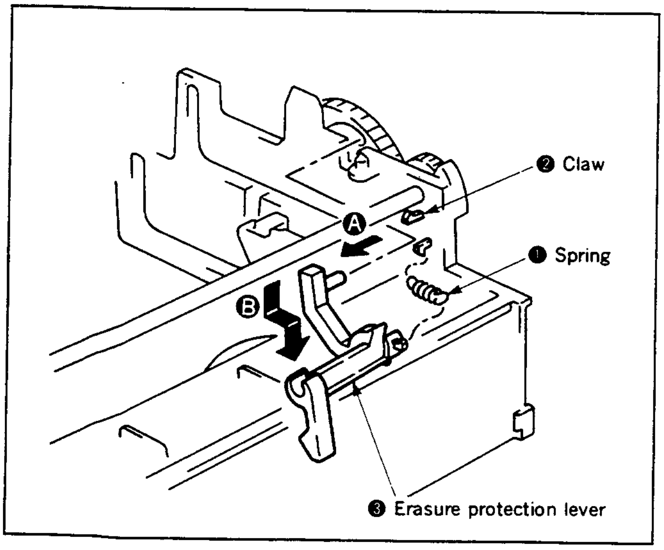

❷ Claw
Ⓐ
❶ Spring
Ⓑ
❸ Erasure protection lever

Fig. 3-2.

3-1-3. Gear cover ass'y (Fig. 3-3)

1) Disengage the four claws ❶, then remove the gear cover ass'y ❷.

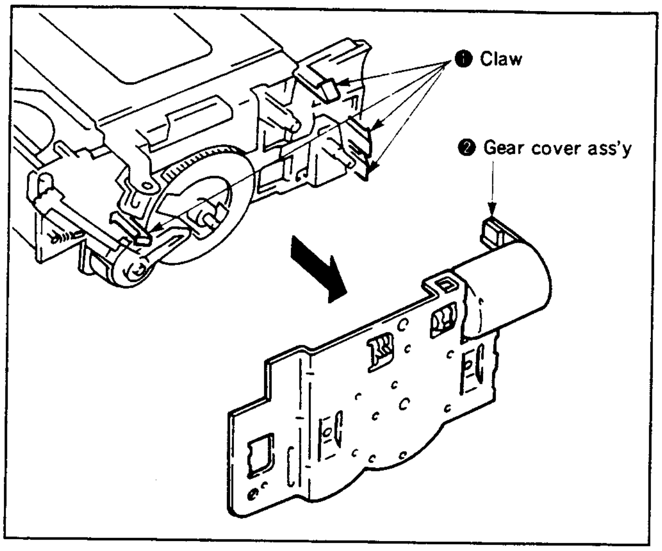

❶ Claw
❷ Gear cover ass'y

Fig. 3-3.

3-1-4. Loading motor, worm gear (FL), worm wheel (FL), worm bearing (Fig. 3-4)

1) Remove washer 3 ❶, then pull out the worm wheel (FL) ❷.
2) Remove the two screws ❸, then remove the loading motor ❹.
3) Remove the worm gear (FL) ❺ and worm bearing ❻.

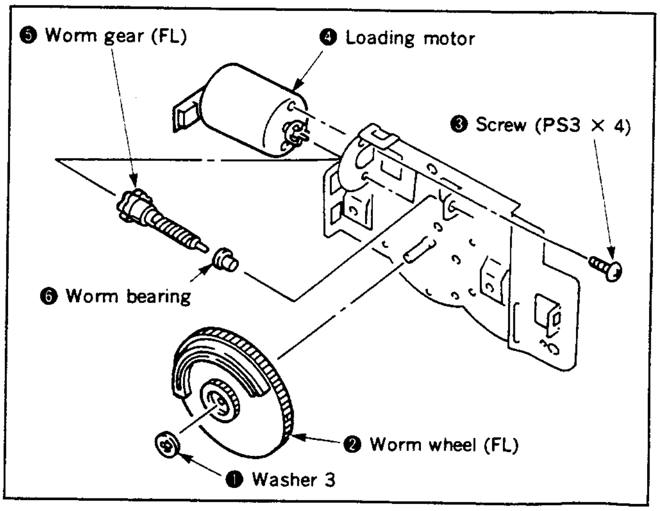

❺ Worm gear (FL)
❹ Loading motor
❸ Screw (PS3 × 4)
❻ Worm bearing
❷ Worm wheel (FL)
❶ Washer 3

Fig. 3-4.

3-1-5. Door OPEN/CLOSE arm (Fig. 3-5)

1) Remove the spring ❶.
2) Pull out the door OPEN/CLOSE arm ❷.

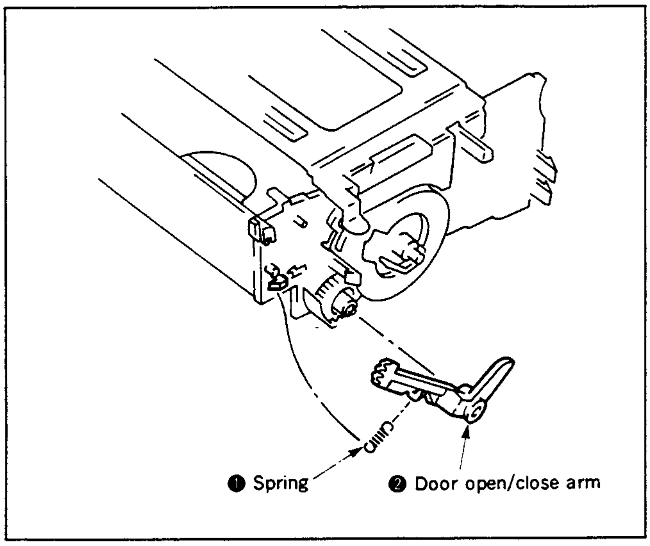

❶ Spring
❷ Door open/close arm

Fig. 3-5.

[Precautions on remounting] (Figs. 3-6 and 3-7.)

- ○ When mounting the gear cover ass'y, match up the two holes on the gear cover ass'y with the two holes on the worm wheel (FL) and then with the hole on the right drive arm ass'y.
- ○ Mesh the FL door and the door OPEN/CLOSE arm together as shown in Ⓐ section in the figure below.
- ○ The erasure protection lever shaft must fit into the groove on the left drive arm ass'y.

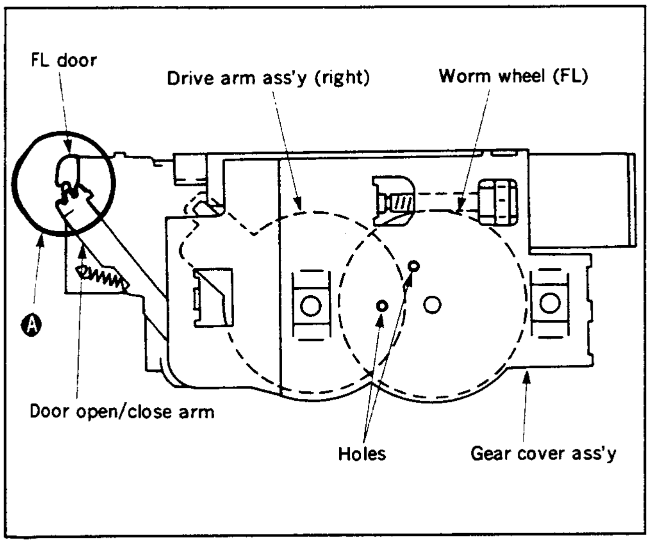

FL door
Drive arm ass'y (right)
Worm wheel (FL)
Ⓐ
Door open/close arm
Holes
Gear cover ass'y

Fig. 3-6.

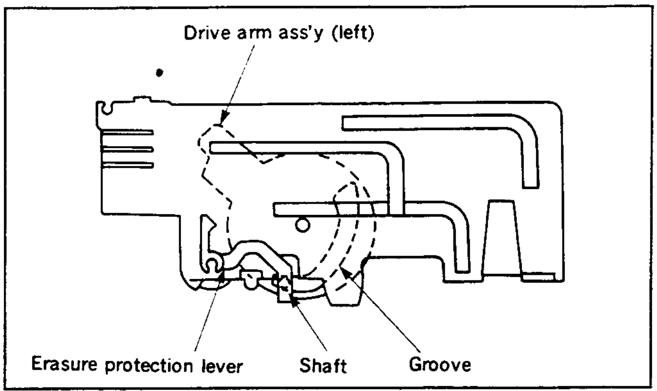

Drive arm ass'y (left)
Erasure protection lever
Shaft
Groove

Fig. 3-7.

3-2. TS ASS'Y AND GUIDE ROLLER ASS'Y No. 2 (Fig. 3-8)

1) Remove the spring ❶.
2) Remove the TS ass'y ❷ in the direction of arrow Ⓐ.
3) Turn guide roller ass'y No. 2 ❸ in the direction of arrow Ⓑ and pull it out.

[Precautions on remounting]

- ○ Clean the surface of guide roller No. 2 ❸ where the tape is attached.
- ○ Apply lubricant over the section shown in Figure A below.

[Adjustment after replacement]

- ○ Perform tape path adjustments as described in 4-1.

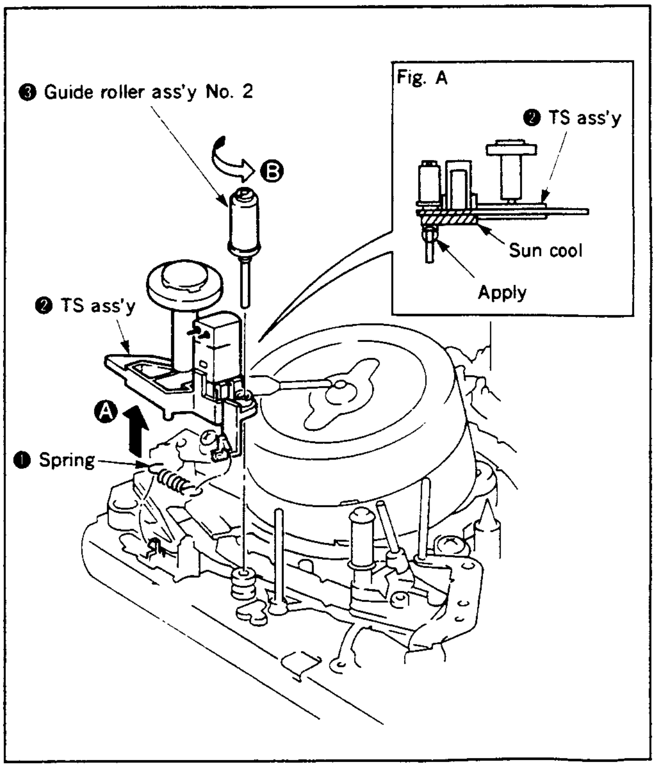

❸ Guide roller ass'y No. 2
Ⓑ
Fig. A
❷ TS ass'y
Sun cool
Apply
❷ TS ass'y
Ⓐ
❶ Spring

Fig. 3-8.

3-3. ACE ASS'Y (Fig. 3-9)

1) Slide the torsion coil spring ❶ in the direction of the arrow.
2) Remove the nylon nut N3 ❷, then pull out the ACE ass'y ❸.
3) Remove the ACE adjuster screw ❹.

[Precautions on remounting]

- ○ Clean the surface of the ACE ass'y ❸ where the tape is attached.
- ○ Hook both ends of the torsion coil spring ❶ to the ass'y as shown in Figure A below.
- ○ Adjust the ACE adjuster screw ❹ to the height shown in Figure A.

[Adjustment after replacement]

- ○ Perform tape path adjustments as described in 4-1.

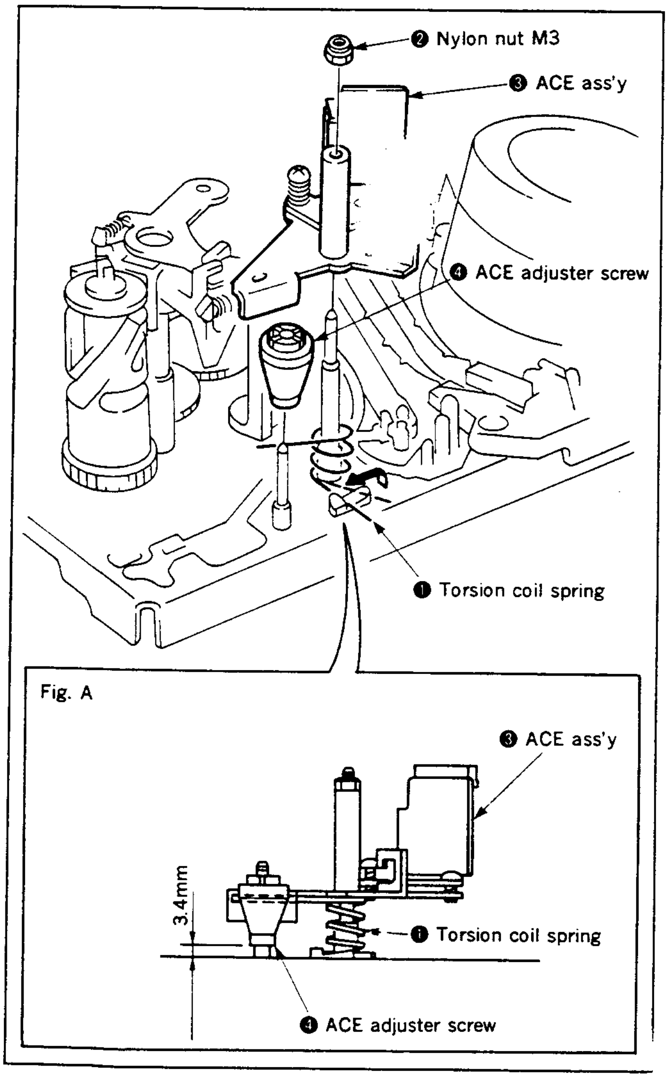

❷ Nylon nut M3
❸ ACE ass'y
❹ ACE adjuster screw
❶ Torsion coil spring
Fig. A
❸ ACE ass'y
3.4mm
❶ Torsion coil spring
❹ ACE adjuster screw

Fig. 3-9.

3-4. DRUM ASS'Y (Fig. 3-10)

1) Remove the three screws ❶, then remove the drum ass'y ❷.

[Precautions on remounting]

- ○ Do not touch the head tips ❸ and the ground plate ❹ directly with your fingers or tools.
- ○ Clean the surface of the drum ass'y ❷ where a tape is attached.
- ○ The stopper ❺ must be attached at the point shown in the figure below.
- ○ Screws must be fastened with a 6kg•cm (±1kg•cm) screw fastening torque. (The screws can be mounted in any order.)

[Adjustment after replacement]

- ○ Perform tape path adjustments as described in 4-1.

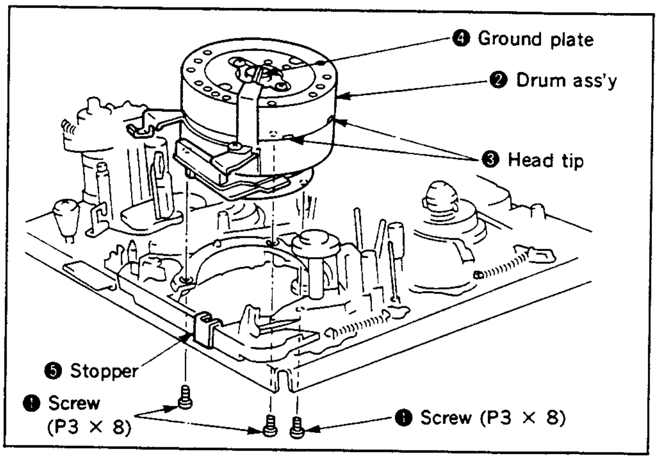

❹ Ground plate
❷ Drum ass'y
❸ Head tip
❺ Stopper
❶ Screw (P3 × 8)
❶ Screw (P3 × 8)

Fig. 3-10.

3-5. DRUM BASE ASS'Y (Fig. 3-11)

1) Remove the drum. (Refer to 3-4.)
2) Remove the three screws ❶, then remove the drum base ass'y ❷.

[Precautions on remounting]

- ○ The spacer ❸ for the drum base must be mounted in its previous position as shown in the figure below.
  [Note that some units do not feature the spacer ❸.]
- ○ Fastening torque must be 10kg•cm (±1kg•cm)
- ○ The screws must be mounted in order of (a),(b) and (c).

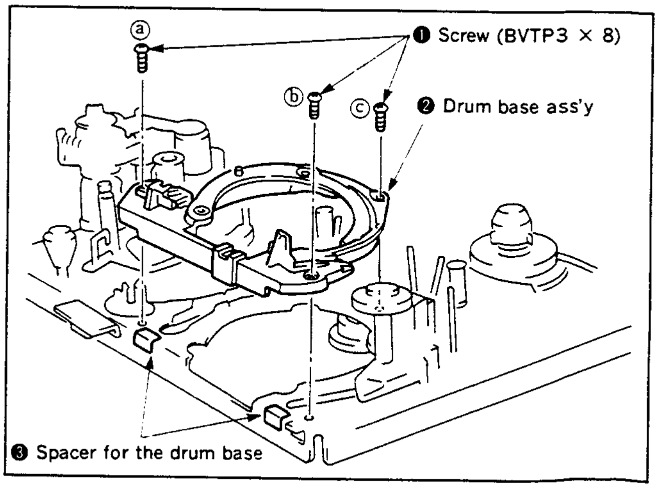

ⓐ
ⓑ
ⓒ
❶ Screw (BVTP3 × 8)
❷ Drum base ass'y
❸ Spacer for the drum base

Fig. 3-11.

3-6. PINCH ROLLER ASS'Y AND ELEVATOR CAM (Fig. 3-12)

1) Remove the two claws ❶, then pull out the stopper ❷.
2) Pull out the pinch roller ass'y ❸.
3) Pull out the elevator cam ❹.

[Precautions on remounting]

- ○ Clean the surface of the pinch roller ass'y ❸ where the tape is attached.
- ○ Match up the ▯ marks on the elevator cam ❹ and cam gear, press ❺.

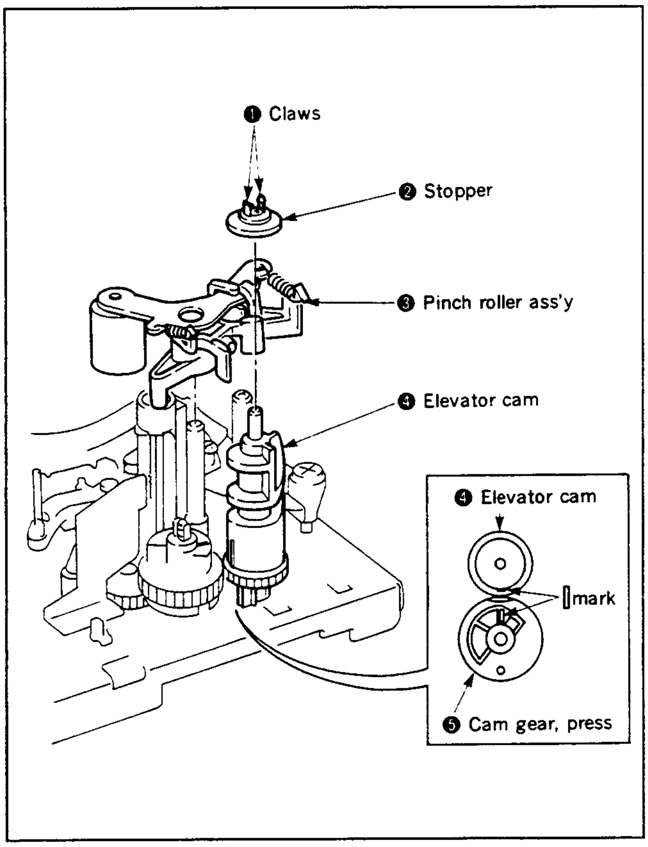

❶ Claws
❷ Stopper
❸ Pinch roller ass'y
❹ Elevator cam
❹ Elevator cam
▯mark
❺ Cam gear, press

Fig. 3-12.

3-7. CAM GEAR, PRESS AND TRANSMISSION GEAR (Fig. 3-13)

1) Remove the pinch roller ass'y. (Refer to 3-6.)
2) Remove the screw ❶, then remove the lid release plate ❷.
3) Remove the two claws ❸, then pull out the cam gear, press ❹.
4) Remove the washer 2 ❺, then pull out the transmission gear ❻.

[Precautions on remounting]

- ○ Check the top and bottom of the transmission gear ❻.
- ○ Match up the hole ❼ on the chassis with the hole ❼ on the cam gear, press ❹.
- ○ Match up the ▯ mark on the cam gear, press ❹ with the ▯ mark on the alleviator cam ❽.

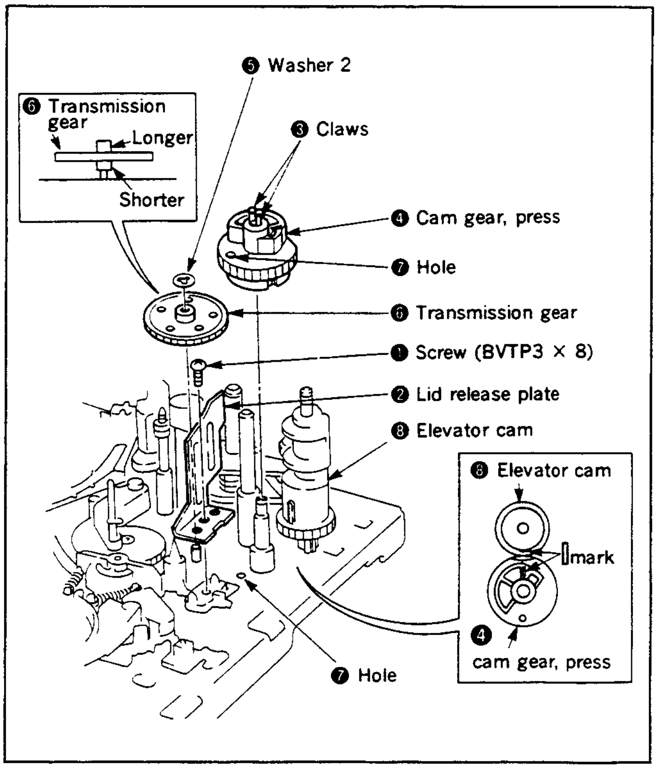

❺ Washer 2
❻ Transmission gear
Longer
Shorter
❸ Claws
❹ Cam gear, press
❼ Hole
❻ Transmission gear
❶ Screw (BVTP3 × 8)
❷ Lid release plate
❽ Elevator cam
❽ Elevator cam
▯mark
❹ cam gear, press
❼ Hole

Fig. 3-13.

3-8. RVS ARM ASS'Y AND RVS CAM GEAR (Fig. 3-14)

1) Remove the nylon nut M2 ❶ and plastic washer ❷.
2) Disengage the claw ❸, then pull out the RVS arm ass'y ❹.
3) Remove washer 2 ❺, then pull out the RVS cam gear ❻.

[Precautions on remounting]

○ The holes ❼ in the chassis and in the RVS cam gear ❻ must match up. Also, make sure to match up the holes ❾ on the cam gear, press ❽ and the chassis.

○ The spring ❿ must be hooked as shown in Fig. A below.

○ Clean the surface of the RVS arm ass'y ❹ where a tape is attached.

○ Apply 1/2 drop of lubricant to the shaft ⓫.

[Adjustment after replacement]

○ Perform tape path adjustments as described in 4-1.

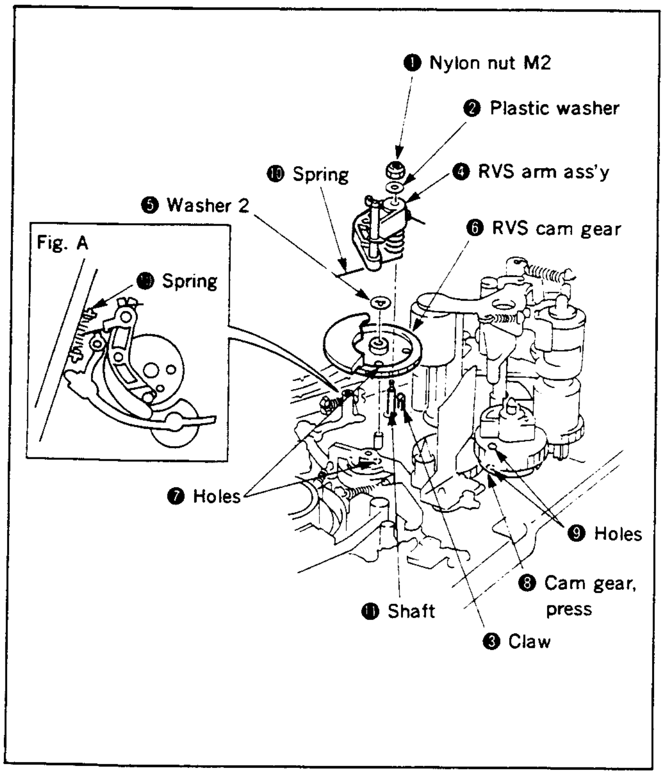

❶ Nylon nut M2
❷ Plastic washer
❿ Spring
❹ RVS arm ass'y
❺ Washer 2
❻ RVS cam gear
Fig. A
❿ Spring
❼ Holes
❾ Holes
❽ Cam gear, press
⓫ Shaft
❸ Claw

Fig. 3-14.

3-9. GUIDE No. 7 (Fig. 3-15)

1) Remove the nylon nut M3 ❶.
2) Pull out guide flange No. 7 ❷, guide sleeve No. 7 ❸, guide flange No. 7 ❹ and compression coil spring ❺ in the given order.

[Precautions on remounting]

○ Clean the surface of the guide sleeve No. 7 ❸ where the tape is attached.

○ Adjust the height of guide No. 7 to the height shown in Fig. A below.

[Adjustment after replacement]

○ Perform tape path adjustments as described in 4-1.

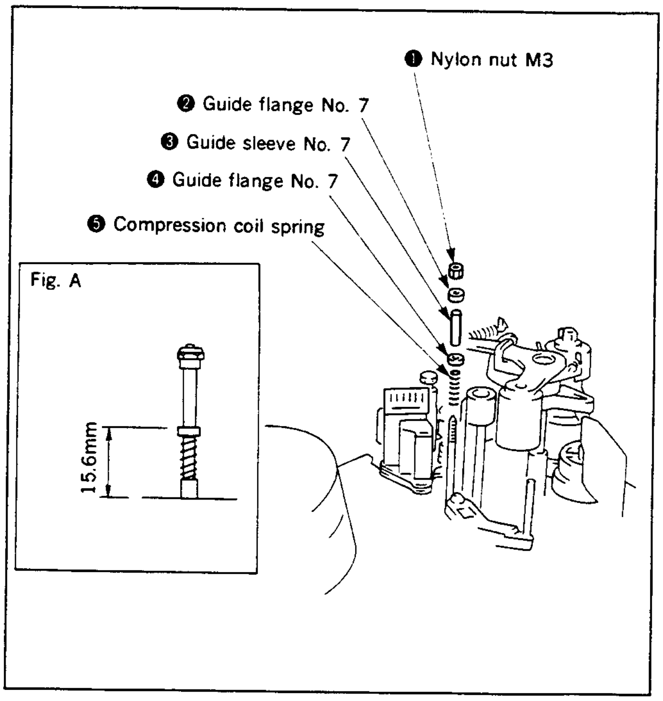

❶ Nylon nut M3
❷ Guide flange No. 7
❸ Guide sleeve No. 7
❹ Guide flange No. 7
❺ Compression coil spring
Fig. A
15.6mm

Fig. 3-15.

3-10. S-BRAKE ASS'Y, T-BRAKE ASS'Y (Fig. 3-16)

1) Remove the spring ❶.
2) Disengage the claw ❷, then pull out the S-brake ass'y ❸.
3) Disengage the claw ❹, then pull out the T-brake ass'y ❺.

[Precautions on remounting]

- ○ Do not touch the brake shoes for the respective S-brake ❸ and T-brake ❺ assy's directly with your fingers.
- ○ Do not hold on to the S-brake ❸ and T-brake ❺ assy's by the arms when inserting them.
- ○ The T-brake ass'y ❺ must be positioned above the S-brake ass'y ❸ as shown in Fig. A below.

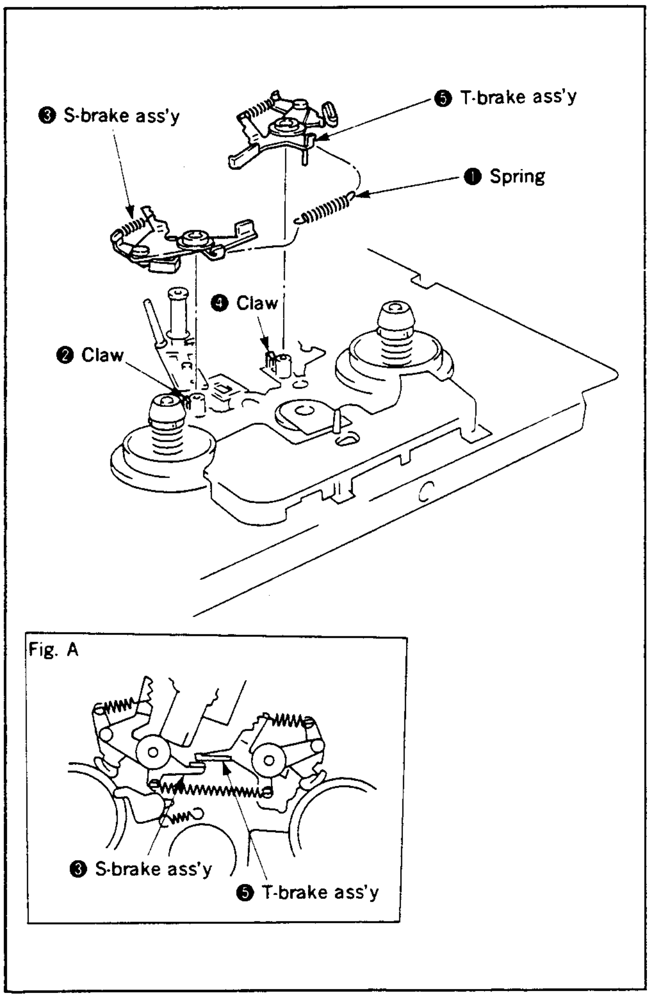

❸ S-brake ass'y
❺ T-brake ass'y
❶ Spring
❹ Claw
❷ Claw
Fig. A
❸ S-brake ass'y
❺ T-brake ass'y

Fig. 3-16.

3-11. T-SOFT BRAKE ASS'Y REV BRAKE ARM (Fig. 3-17)

1) Remove the end of the spring ❶ from the REV brake arm ❷.
2) Remove the end of the spring ❸ from the chassis.
3) Disengage the claw ❹, then pull out the T-soft brake ass'y ❺.
4) Disengage the claw ❻, then pull out the REV brake arm ❷.

[Precautions on remounting]

- ○ Do not touch the brake shoe of the T-soft brake ass'y ❺ directly with your fingers.

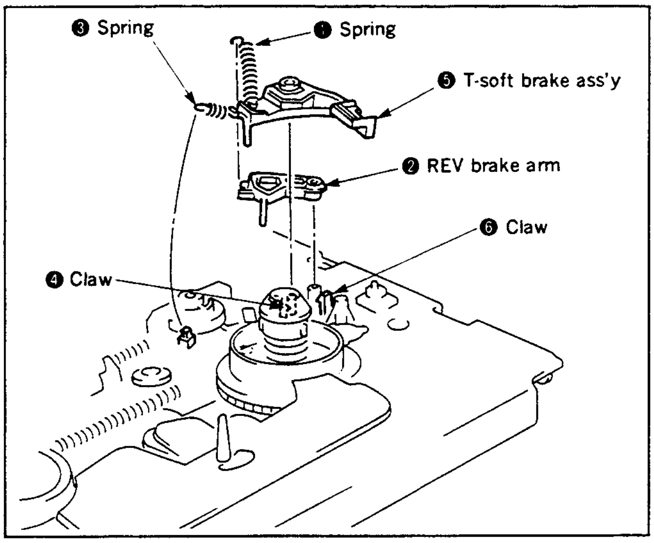

❸ Spring
❶ Spring
❺ T-soft brake ass'y
❷ REV brake arm
❻ Claw
❹ Claw

Fig. 3-17.

3-12. S-SOFT BRAKE ARM ASS'Y (Fig. 3-18)

1) Unhook the end of the spring ❶ from the chassis.
2) Disengage the claw ❷, then pull out the S-soft brake arm ass'y ❸.

[Precautions on remounting]

- ○ The S-soft brake arm ass'y must not clamp down the tension regulator band ass'y ❹ nor be positioned below the tension regulator band ❹.

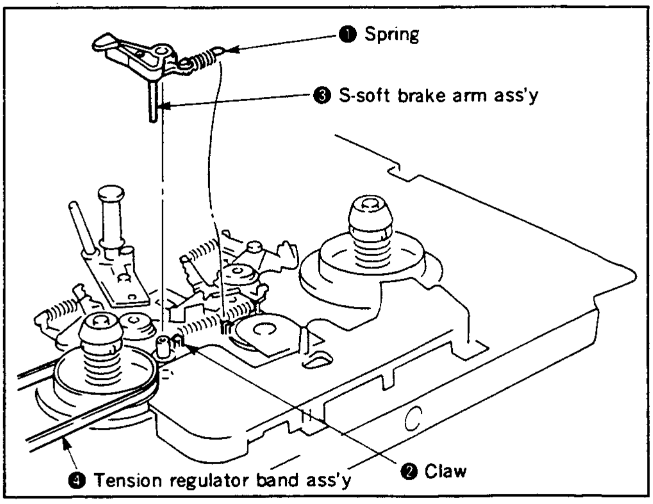

❶ Spring
❸ S-soft brake arm ass'y
❹ Tension regulator band ass'y
❷ Claw

Fig. 3-18.

3-13. S-GUIDE AND T-GUIDE ROLLER ASSY'S (Fig. 3-19)

1) Loosen the setscrew ❶, then remove the S-guide roller ass'y ❷ by turning it in the direction of the arrow Ⓐ.
2) Loosen the setscrew ❸, then remove the T-guide roller ass'y ❹ by turning it in the direction of arrow Ⓑ.

[Precautions on remounting]

○ Clean the surfaces of the S-guide roller ❷ and T-guide roller assy's ❹ where a tape is attached.

[Adjustment after replacement]

○ Perform tape path adjustments as described in 4-1.

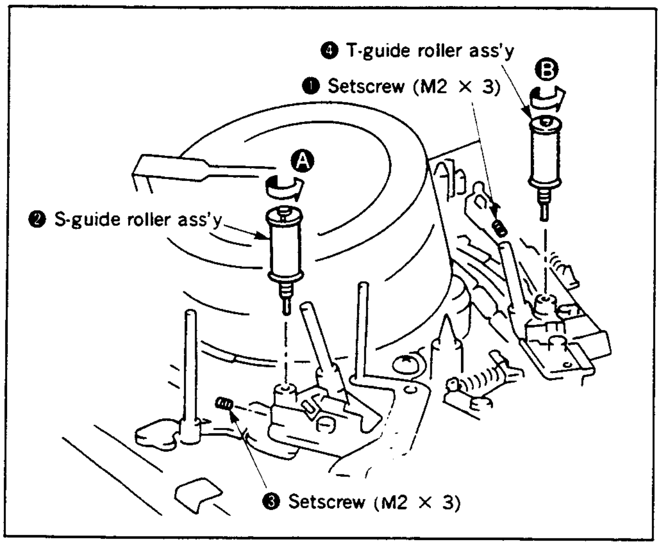

❹ T-guide roller ass'y
Ⓑ
❶ Setscrew (M2 × 3)
Ⓐ
❷ S-guide roller ass'y
❸ Setscrew (M2 × 3)

Fig. 3-19.

3-14. REEL LOCK RELEASE AND REW GEAR (Fig. 3-20)

1) Disengage the two claws ❶, then remove the reel lock release ❷ along with the spring ❸ (while the spring is still attached).
2) Next, pull out the REW gear ❹ with the spring bearing ❺ still attached).

[Precautions on remounting]

○ Make sure that the small thrust bearing ❻ remains attached.

○ Make sure that the two claws ❶ lock the real lock release ❷ in place.

○ Apply 1/2 drop of lubricant to the shaft ❼.

○ Make sure that the spring ❸ adheres to the reel lock release ❷ and that it fits inside the rib of the REW gear ❹.

○ Mount the REW gear ❹ by meshing it with gear ❽.

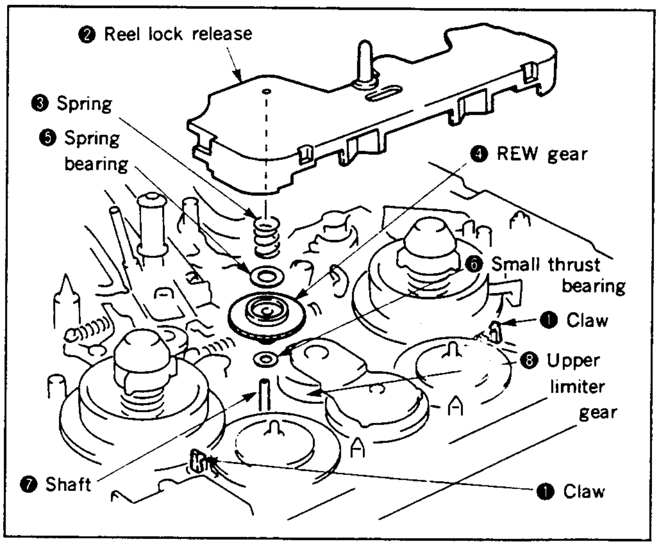

❷ Reel lock release
❸ Spring
❺ Spring bearing
❹ REW gear
❻ Small thrust bearing
❶ Claw
❽ Upper limiter gear
❼ Shaft
❶ Claw

Fig. 3-20.

3-15. TENSION REGULATOR ARM ASS'Y, TENSION REGULATOR BAND ASS'Y (Fig. 3-21)

1) Remove the reel lock release ass'y. (Refer to Fig. 3-14.)
2) Disengage the three claws marked ❶ and the claw marked ❷, then remove the tension regulator band ass'y ❸.
3) Unhook the end of the spring ❹ from the chassis.
4) Disengage the claw ❺, then pull out the tension regulator arm ass'y ❻.

[Precautions on remounting]

- ○ Roll up the tension regulator band ❸ on the S-reel by turning the S-soft brake arm ass'y ❼ in the direction of the arrow.
- ○ Hook the spring ❹ at the center of the spring hook ❽.
- ○ Do not touch the brake shoe of the tension regulator band ass'y ❸ directly with your fingers.
- ○ Mount the tension regulator arm ass'y ❻ at the position shown in Fig. A below.

[Adjustment after replacement]

- ○ Check the back tension. (Refer to 4-1-1.)
- ○ Perform tape path adjustments as described in 4-1.

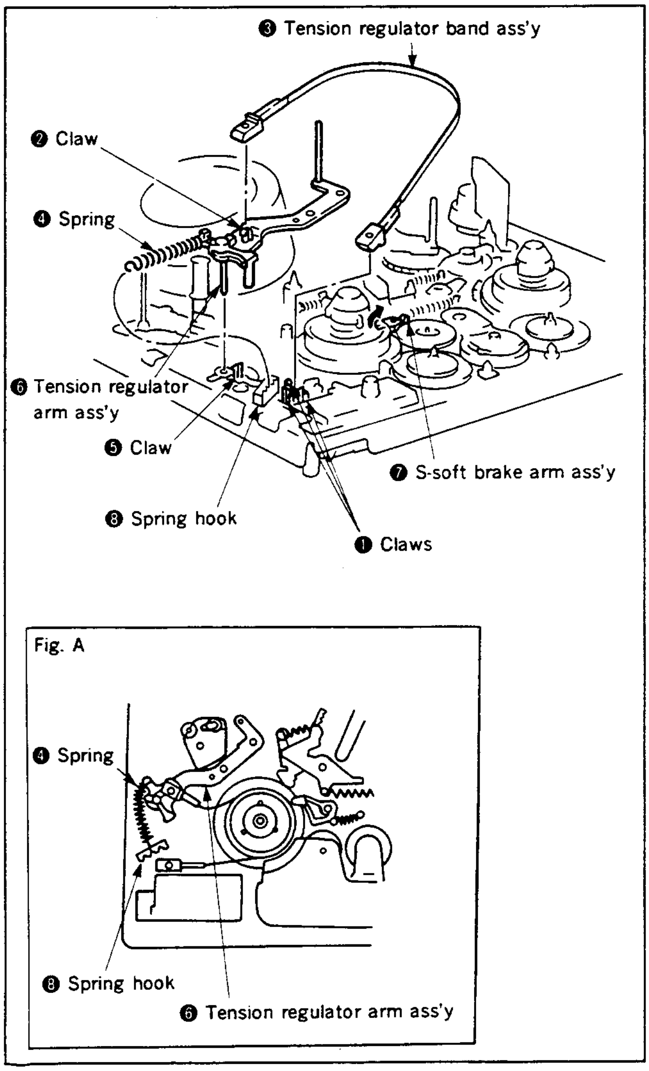

❸ Tension regulator band ass'y
❷ Claw
❹ Spring
❻ Tension regulator arm ass'y
❺ Claw
❽ Spring hook
❼ S-soft brake arm ass'y
❶ Claws
Fig. A
❹ Spring
❽ Spring hook
❻ Tension regulator arm ass'y

Fig. 3-21.

3-16. S TAKE-UP ASS'Y (Fig. 3-22)

1) Remove the tension regulator arm ass'y and the tension regulator band ass'y. (Refer to 3-15.)
2) Unhook the end of the spring ❶ from the S take-up arm ❷.
3) Disengage the two claws ❸, then remove the S take-up ass'y ❹.

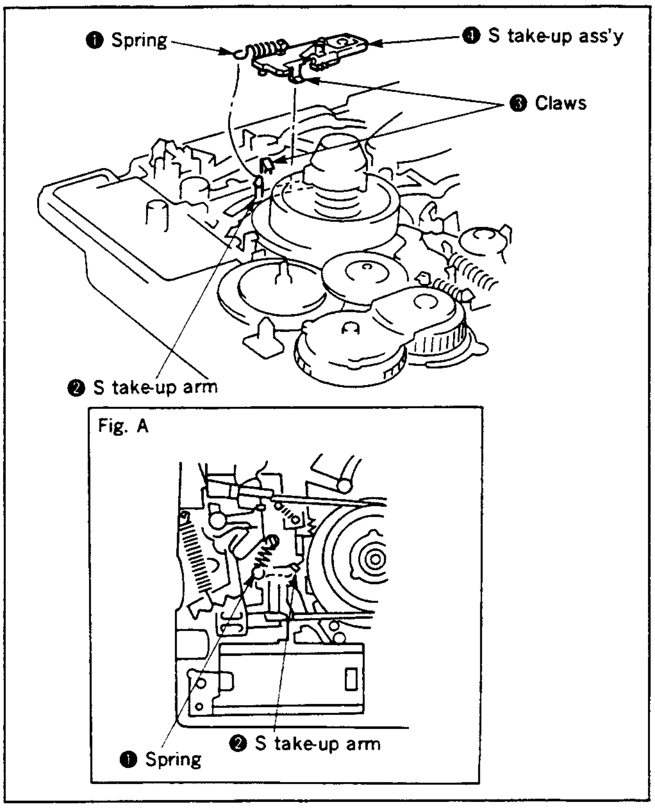

❶ Spring
❹ S take-up ass'y
❸ Claws
❷ S take-up arm
Fig. A
❶ Spring
❷ S take-up arm

Fig. 3-22.

3-17. S-REEL ASS'Y (Fig. 3-23)

1) Remove the S-soft brake arm ass'y. (Refer to 3-12.)
2) Remove the reel lock release. (Refer to 3-14.)
3) Remove the tension regulator band ass'y. (Refer to 3- 15.)
4) Turn the S-brake ass'y ❶ in the direction of the arrow.
5) Pull out the S-reel ass'y ❷.

[Precautions on remounting]

- ○ At least one reel stand thrust bearing ❸ must be attached (but not more than two).
- ○ Do not touch the outer edge of the S-reel ass'y ❷ directly with your fingers.
- ○ Apply 1/2 drop of lubricant over the shaft ❹.
- ○ Mount the S-reel ass'y ❷ while meshing it with the relay gear ❺.

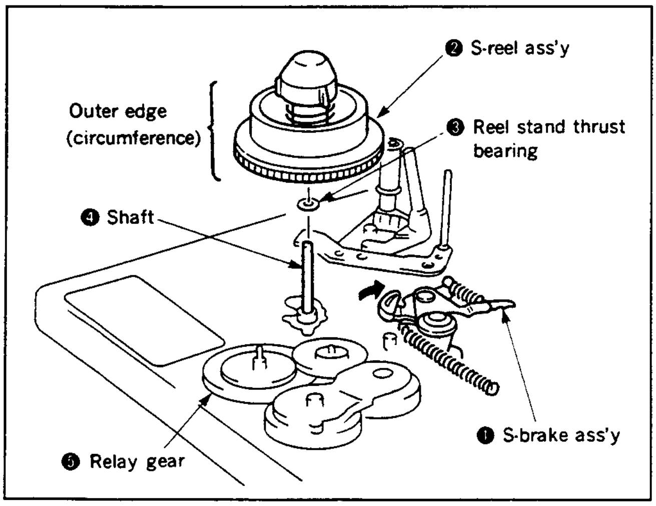

❷ S-reel ass'y
Outer edge (circumference)
❸ Reel stand thrust bearing
❹ Shaft
❶ S-brake ass'y
❺ Relay gear

Fig. 3-23.

3-18. T-REEL ASS'Y (Fig. 3-24)

1) Remove the T-soft brake ass'y. (Refer to 3-11.)
2) Remove the reel lock release ass'y. (Refer to 3-14.)
3) Turn the T-brake ass'y ❶ in the direction of the arrow.
4) Pull out the T-reel ass'y ❷.

[Precautions on remounting]

- ○ At least one reel stand thrust bearing ❸ must be attached (but not more than two).
- ○ Do not touch the outer edge of the T-reel ass'y ❷ directly with your fingers.
- ○ Apply 1/2 drop of lubricant on the shaft ❹.
- ○ Mount the T-reel ass'y ❷ while meshing it with the relay gear ❺.

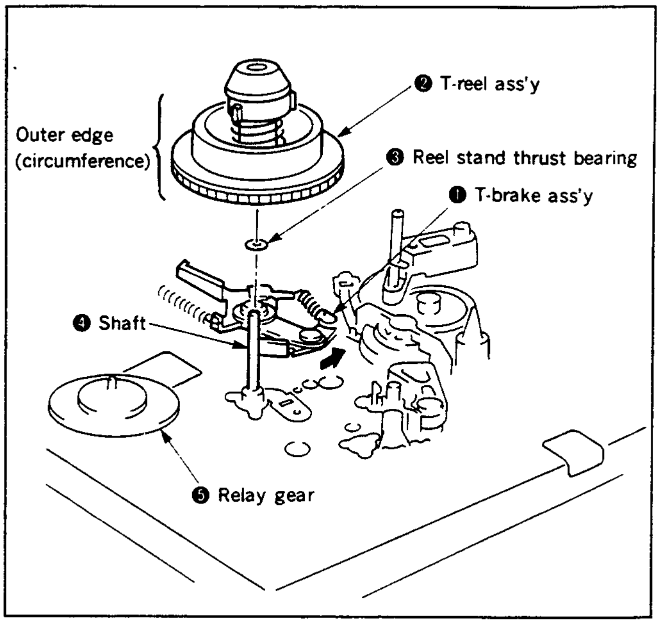

❷ T-reel ass'y
Outer edge (circumference)
❸ Reel stand thrust bearing
❶ T-brake ass'y
❹ Shaft
❺ Relay gear

Fig. 3-24.

3-19. PENDULUM ARM ASS'Y (Fig. 3-25)

1) Remove the reel lock release ass'y. (Refer to 3-14.)
2) Remove the washer 2 ❶, then pull out the pendulum arm ass'y ❷.

[Precautions on remounting]

- ○ Fit the boss on the pendulum cap ❸ into the gap in the pendulum slide plate ❹.
- ○ The plastic slider ❺ must be attzched.
- ○ Apply 1/2 drop of lubricant on the shaft ❻.
- ○ Mount the pendulum arm ass'y ❷ by meshing it with the upper limiter gear ❼.

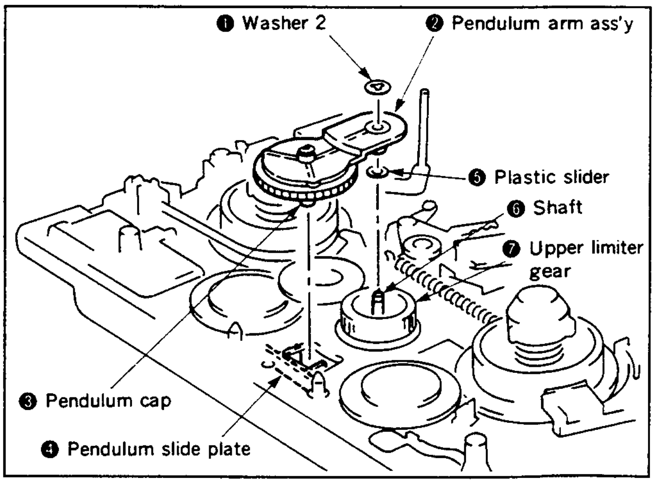

❶ Washer 2
❷ Pendulum arm ass'y
❺ Plastic slider
❻ Shaft
❼ Upper limiter gear
❸ Pendulum cap
❹ Pendulum slide plate

Fig. 3-25.

3-20. RELAY GEAR (Fig. 3-26)

1) Remove the reel lock release and REW gear. (Refer to 3-14.)
2) Remove the S-reel ass'y. (Refer to 3-17.)
3) Remove the T-reel ass'y. (Refer to 3-18).
4) Pull out the two relay gears ❶.

[Precautions on remounting]

○ The relay gears ❶ must rotate smoothly after remounting.

○ Apply 1/2 drop of lubricant to the respective shafts ❷.

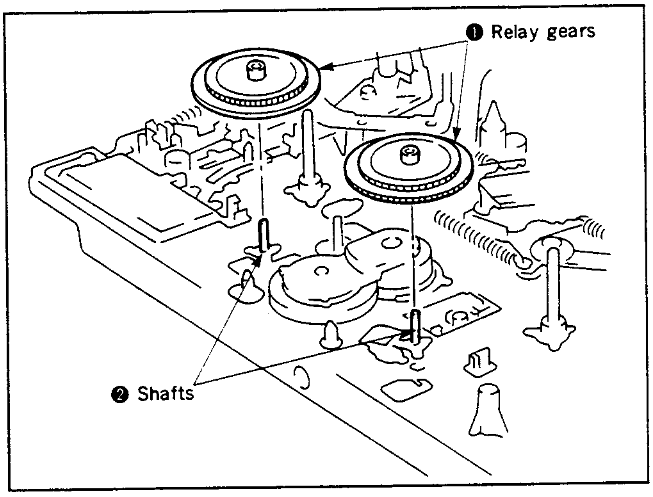

❶ Relay gears
❷ Shafts

Fig. 3-26.

3-21. ADJUSTER ARM ASS'Y (Fig. 3-27)

1) Remove screw ❶.
2) Remove washer ❻.
3) Remove the end of the spring ❷ hooked to the chassis.
4) Remove the end of the timing belt ❸ from the capstan motor arm ass'y.
5) Disengage the claw ❹, then remove the adjuster arm ass'y.

[Precautions on remounting]

○ First mount the adjuster arm ass'y ❺, timing belt ❸ and spring ❷, then attach the washer ❻ and fasten the screw ❶.

○ The screw fastening torque must be within 5kg•cm (±1kg•cm).

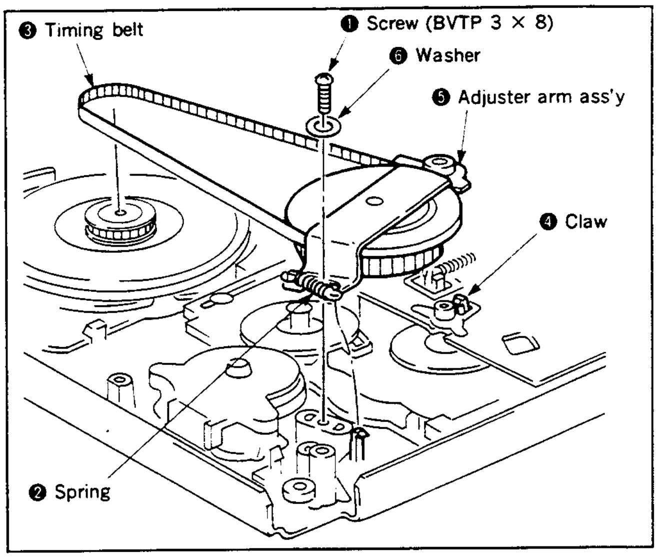

❸ Timing belt
❶ Screw (BVTP 3 × 8)
❻ Washer
❺ Adjuster arm ass'y
❹ Claw
❷ Spring

Fig. 3-27.

3-22. CAP BRAKE ASS'Y (Fig. 3-28)

1) Loosen the screw ❶, then push the timing belt ❷ in the direction of the arrow.
2) Unhook the end of the spring ❸ from the chassis.
3) Disengage claw ❹, then pull out CAP brake ass'y ❺.

[Precautions on remounting]

○ Do not touch the brake shoe of the CAP brake ass'y ❺ directly with your fingers.

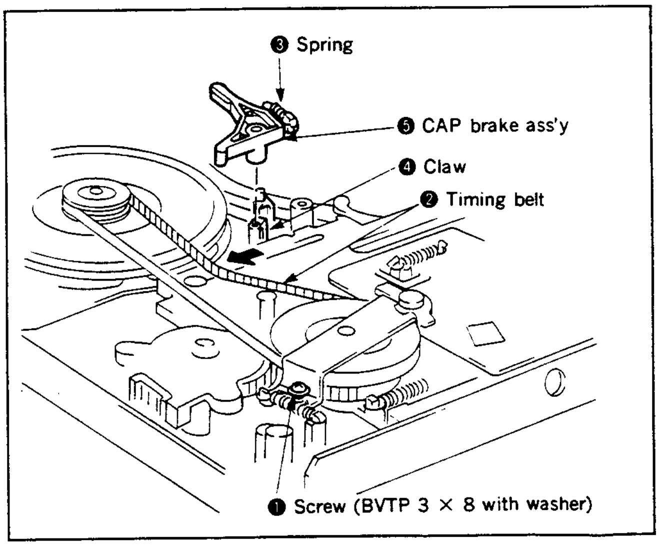

❸ Spring
❺ CAP brake ass'y
❹ Claw
❷ Timing belt
❶ Screw (BVTP 3 × 8 with washer)

Fig. 3-28.

3-23. CAPSTAN MOTOR (Fig. 3-29)

1) Turn the ACE ass'y ❶ in the direction of arrow Ⓐ as shown in Fig. A below, then remove three screws ❷.
2) Remove screw ❸, then remove the rotor clamp ❹.
3) Turn the CAP brake ass'y ❺ in the direction of arrow Ⓑ, then pull out the capstan motor ❻.

[Precautions on remounting]

- ○ Clean the section of the capstan motor ❻ where the tape is attached.
- ○ Do not touch the brake shoe of the CAP brake ass'y ❺ directly with your fingers.
- ○ Of the three screws ❷, first fasten screw A temporarily, then fasten screws B and C firmly, followed by screw A.
- ○ The screw fastening torque must be within 3kg•cm ± 1kg•cm.

[Adjustments after mounting]

- ○ Perform tape path adjustments as described in 4-1.

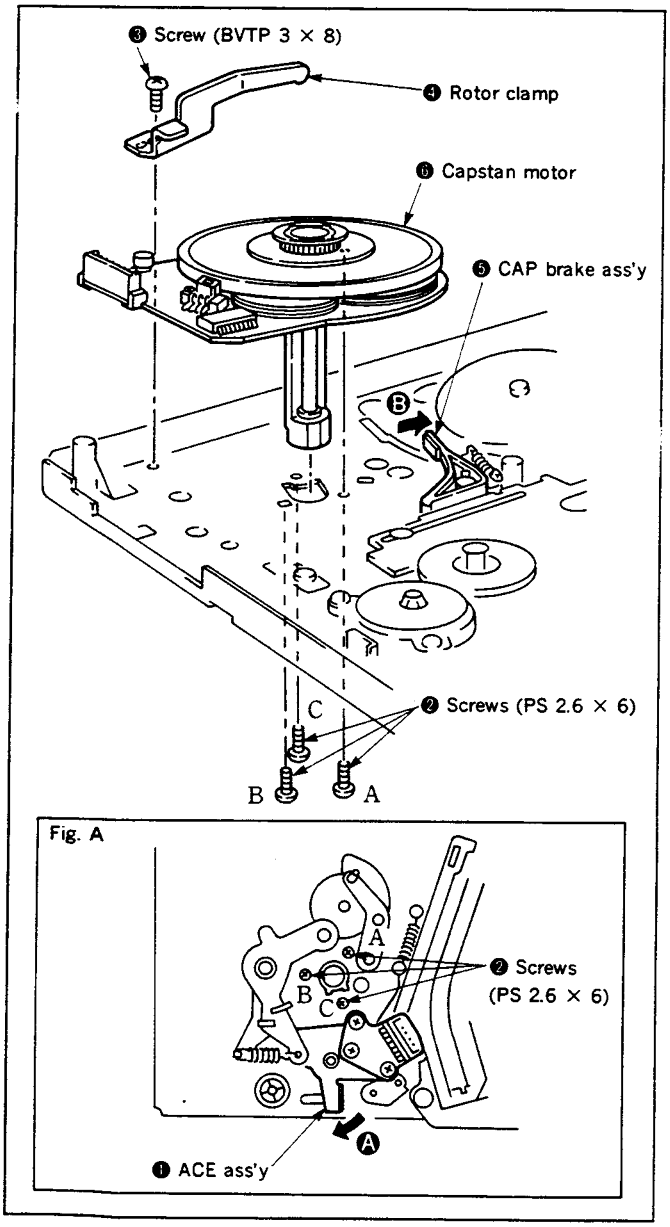

❸ Screw (BVTP 3 × 8)
❹ Rotor clamp
❻ Capstan motor
❺ CAP brake ass'y
Ⓑ
C
❷ Screws (PS 2.6 × 6)
B
A
Fig. A
A
B
C
❷ Screws
(PS 2.6 × 6)
Ⓐ
❶ ACE ass'y

Fig. 3-29.

3-24. ROTARY SWITCH (Fig. 3-30)

1) Remove the adjuster arm ass'y. (Refer to 3-21.)
2) Remove the screws ❶ and ❷, then pull out the rotary switch ❸.

[Precautions on remounting]

- ○ Match up the ● mark on the rotary switch ❸ with the ▲ mark on the RKB cam gear ❹ as shown in Fig. A.
- ○ Match up holes ❻ on the pendulum arm ❺ and the chassis.

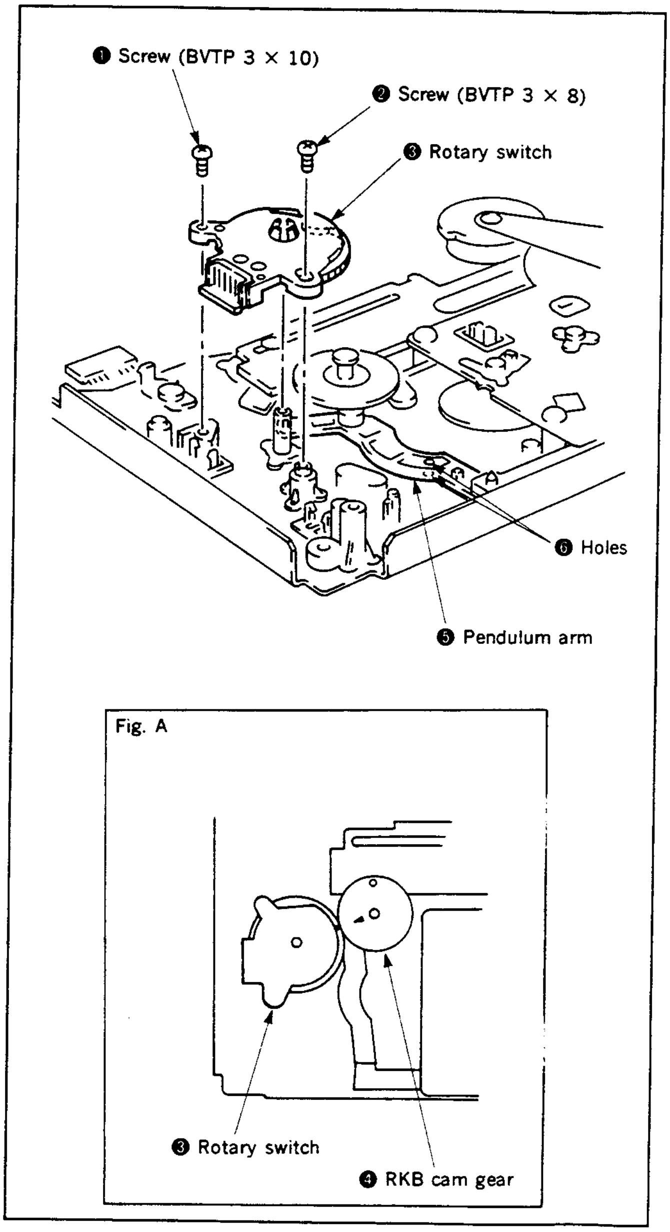

❶ Screw (BVTP 3 × 10)
❷ Screw (BVTP 3 × 8)
❸ Rotary switch
❻ Holes
❺ Pendulum arm
Fig. A
❸ Rotary switch
❹ RKB cam gear

Fig. 3-30.

3-25. RKB CAM GEAR (Fig. 3-31)

1) Remove the adjuster arm ass'y. (Refer to 3-22.)
2) Remove washer 2 ❶, then pull out the RKB cam gear ❷.

[Precautions on remounting]

- ○ When the limiter arm ❸ is pushed in the direction of the arrow, the pin must fit into the notch on the RKB cam gear ❷.
- ○ The ■ mark on rotary switch ❺ must match up with the ◀ mark on the RKB cam gear ❷ as shown in Fig. A.
- ○ Apply 1/2 drop of lubricant to shaft ❻.
- ○ Match up the holes ❹ on the RKB cam gear ❷ and the mode slide plate.

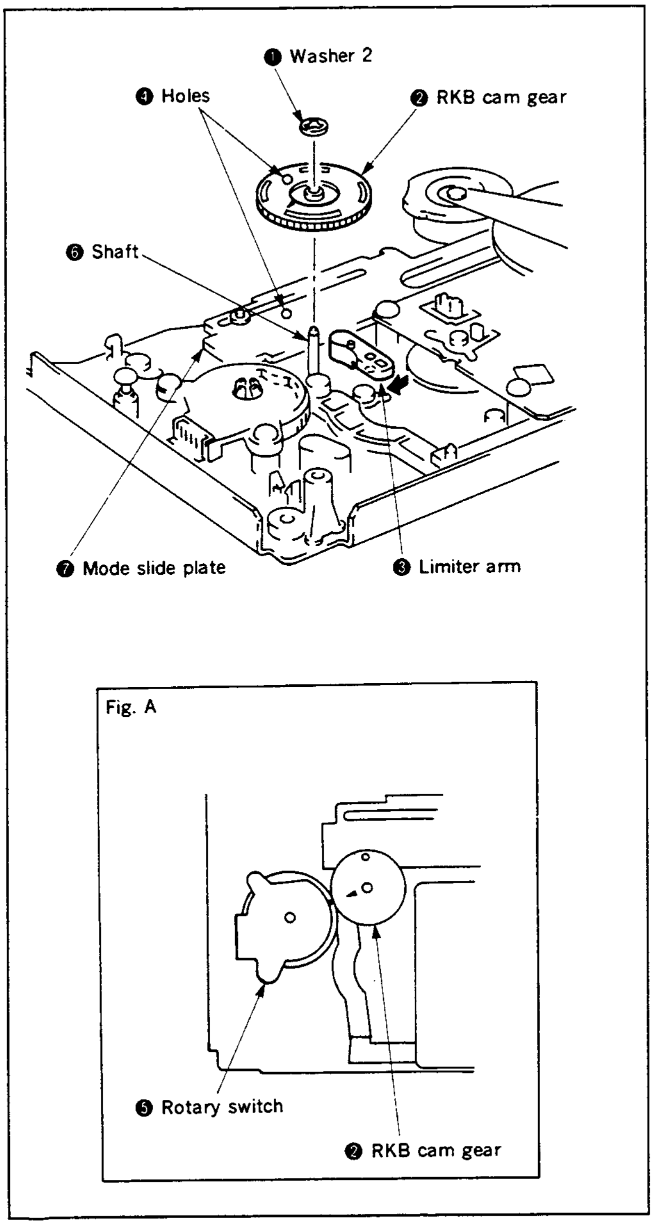

❶ Washer 2
❹ Holes
❷ RKB cam gear
❻ Shaft
❼ Mode slide plate
❸ Limiter arm
Fig. A
❺ Rotary switch
❷ RKB cam gear

Fig. 3-31.

3-26. SUB-CHASSIS ASS'Y (Fig. 3-32)

1) Remove the reel lock release arm and REW gear. (Refer to 3-15.)
2) Remove the pendulum arm ass'y. (Refer to 3-19.)
3) Remove the adjuster arm ass'y. (Refer to 3-22.)
4) Remove the three screws ❶, then remove sub-chassis ass'y ❷.

[Precautions on remounting]

- ○ The switching arm ❸ must be switched in the direction of the arrow.
- ○ The screws must be fastened in order of a, b and c.
- ○ Mount the sub-chassis carefully so as not to damage the gear.
- ○ The corner edge of the lug terminal ❹ must fit into the gap between the chassis ass'y ❷ and mechanism chassis.

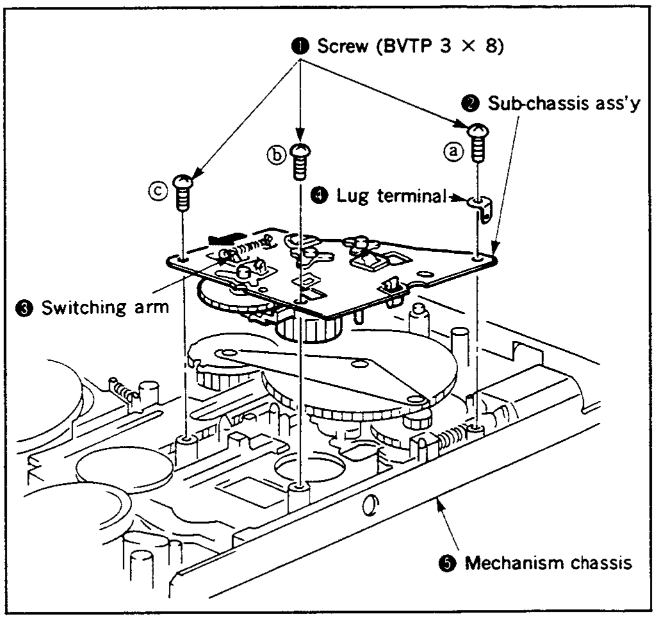

❶ Screw (BVTP 3 × 8)
❷ Sub-chassis ass'y
ⓑ
ⓐ
ⓒ
❹ Lug terminal
❸ Switching arm
❺ Mechanism chassis

Fig. 3-32.

3-27. PENDULUM SLIDE PLATE, PENDULUM ARM (Fig. 3-33)

1) Remove the rotary switch. (Refer to 3-24.)
2) Remove the RKB cam gear. (Refer to 3-25.)
3) Remove the sub-chassis ass'y. (Refer to 3-26.)
4) Disengage the two claws ❶, then pull out the pendulum slide plate ❷.
5) Unhook the spring ❸.
6) Disengage the claw ❹, then pull out pendulum arm ❺.

[Precautions on remounting]

○ The shaft ❻ must fit into hole ❼.

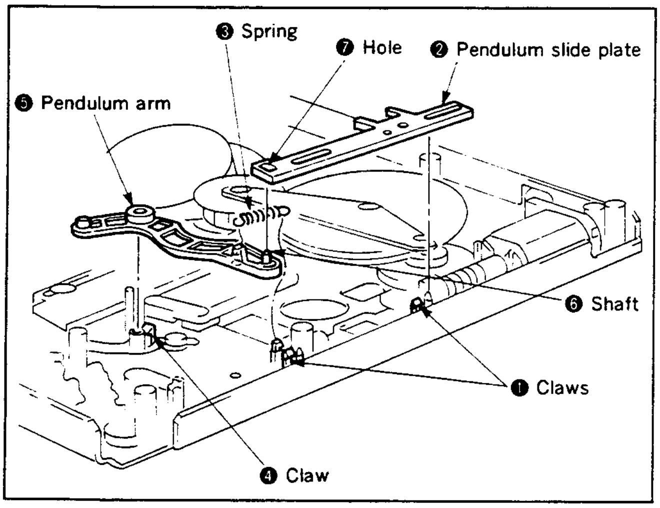

❸ Spring
❼ Hole
❷ Pendulum slide plate
❺ Pendulum arm
❻ Shaft
❶ Claws
❹ Claw

Fig. 3-33.

3-28. THE LIMITER ARM AND LIMITER SLIDE PLATE (Fig. 3-24)

1) Remove the RKB cam gear. (Refer to 3-25.)
2) Remove the sub-chassis. (Refer to Fig. 3-26.)
3) Disengage the claw ❶, then pull out the limiter arm ❷.
4) Disengage the two claws ❸, then pull out the limiter slide plate ❹.

[Precautions on remounting]

○ The shaft ❺ must fit into the hole ❻.

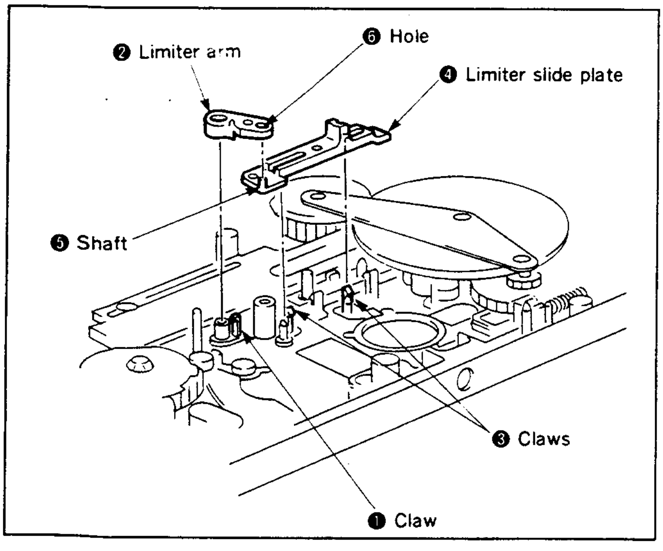

❷ Limiter arm
❻ Hole
❹ Limiter slide plate
❺ Shaft
❸ Claws
❶ Claw

Fig. 3-34.

3-29. CAM MOTOR (Fig. 3-35)

1) Remove the sub- chassis ass'y. (Refer to 3-26.)
2) Disengage the six claws ❶, then remove the cam motor ❷ and worm gear ❸.

[Precautions on remounting]

○ Check the meshing of cam motor ❷ and worm gear ❸.

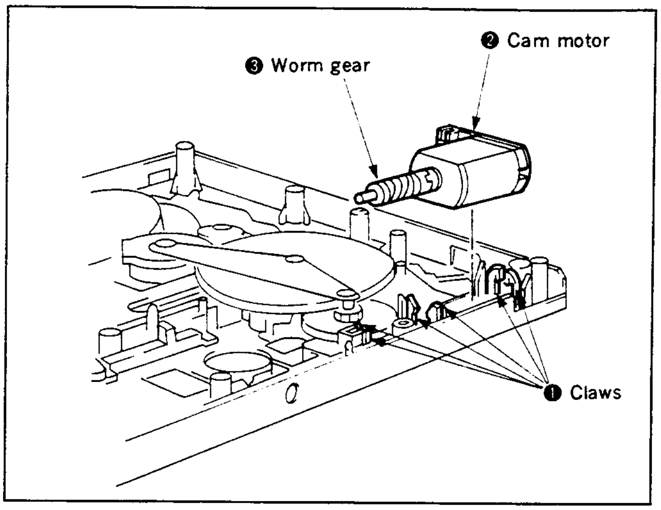

❷ Cam motor
❸ Worm gear
❶ Claws

Fig. 3-35.

3-30. CAM GEAR (Fig. 3-36)

1) Remove the three washers 2 ❶, then pull out the cam gear holder ❷.
2) Pull out the cam gear ❸.

[Precautions on remounting]

○ Match up the right loading gear ass'y, the tension regulator arm, the S take-up arm, the work wheel, the brake arm and the mode slide plate with respective holes ❹ to ❾ on the chassis in that order.

○ Match up the hole ❿ on the mode slide plate with the hole ❿ in cam gear ❸.

○ Apply 1/2 drop of lubricant to the shaft ⓫.

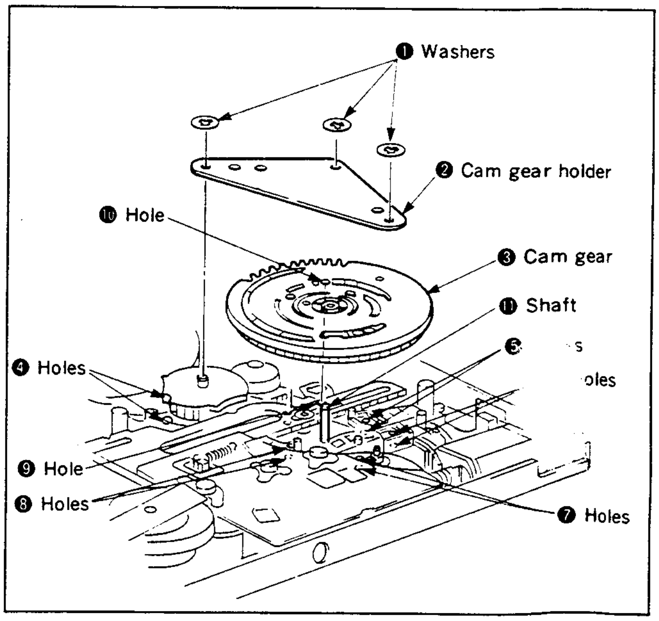

❶ Washers
❷ Cam gear holder
❿ Hole
❸ Cam gear
⓫ Shaft
❺ s
oles
❹ Holes
❾ Hole
❽ Holes
❼ Holes

Fig. 3-36.

3-31. TENSION REGULATOR ARM, S TAKE-UP ARM (Fig. 3-37)

1) Remove the cam gear. (Refer to 3-30)
2) Disengage the claw ❶, then remove the tension regulator arm ❷.
3) Remove the end of the spring ❸ from the S take-up arm ❹.
4) Disengage the claw ❺, then pull out S take-up arm ❹.

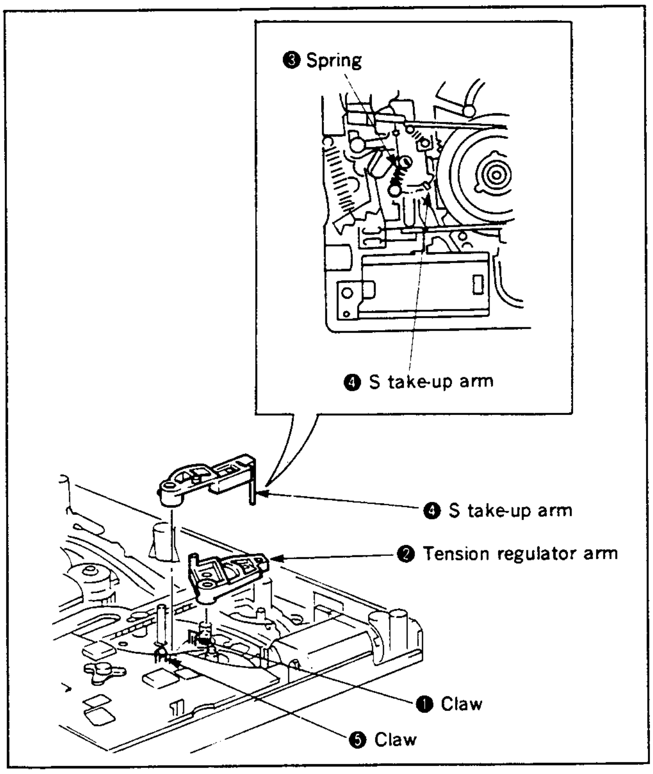

❸ Spring
❹ S take-up arm
❹ S take-up arm
❷ Tension regulator arm
❶ Claw
❺ Claw

Fig. 3-37.

3-32. MODE SLIDE PLATE, RVS RELAY GEAR (Fig. 3-38)

1) Remove the RKB cam gear. (Refer to 3-25.)
2) Remove the cam gear. (Refer to 3-30.)
3) Remove the two washers 2 ❶.
4) Turn the CAP brake ❷ in the direction of the arrow, then pull out mode slide plate ❸.
5) Pull out the RVS relay gear ❹.

[Precautions on remounting]

○ Match up the hole ❺ on the RVS relay gear ❹ with hole ❺ in the chassis.

○ Match up the holes ❻ on the mode slide plate ❸ with holes ❻ in the chassis.

○ Apply 1/2 drop of lubricant to the shaft ❼.

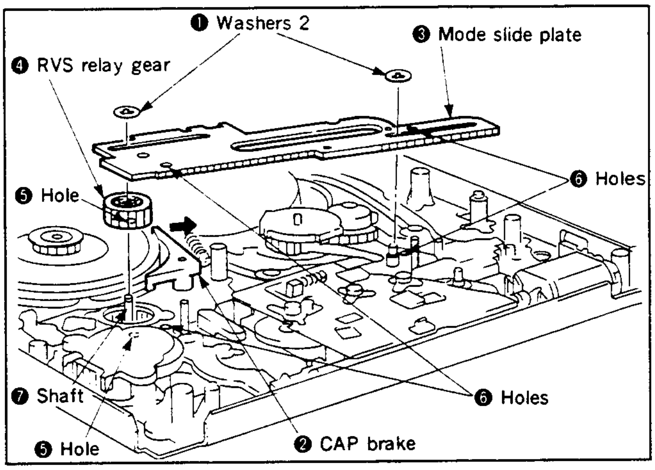

❶ Washers 2
❸ Mode slide plate
❹ RVS relay gear
❺ Hole
❻ Holes
❼ Shaft
❻ Holes
❺ Hole
❷ CAP brake

Fig. 3-38.

3-33. BRAKE ARM, BRAKE SLIDE PLATE (Fig. 3-39)

1) Remove the sub-chassis. (Refer to 3-26.)
2) Remove the cam gear. (Refer to 3-30.)
3) Disengage the claw ❶, then pull out the brake arm ❷.
4) Disengage the two claws ❸, then pull out the brake slide plate ❹.

[Precautions on remounting]

○ Insert the shaft ❺ into hole ❻.

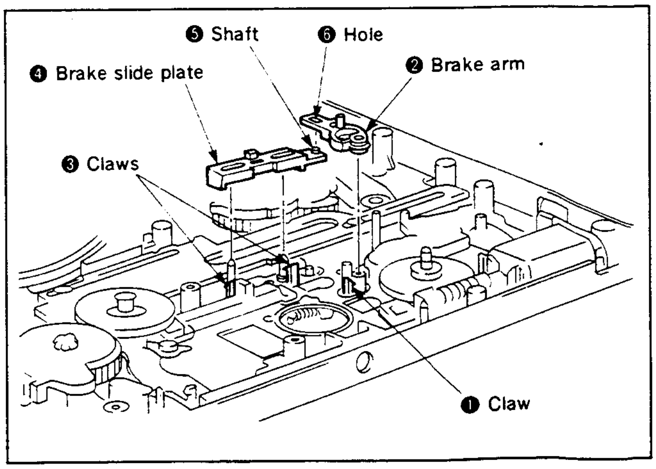

❺ Shaft
❻ Hole
❹ Brake slide plate
❷ Brake arm
❸ Claws
❶ Claw

Fig. 3-39.

3-34. RIGHT SHUTTLE, RIGHT LOADING GEAR ASSY'S (Fig. 3-40)

1) Remove the mode slide plate. (Refer to 3-32.)
2) Remove the plastic slider ❶, then pull out the right shuttle ass'y ❷.
3) Pull out the right loading gear ass'y ❸.

[Precautions on remounting]

○ Match up the ▲ mark on the right loading gear ass'y ❸ with the ▲ mark on the left loading gear ass'y ❹ as shown in Fig. A below.

○ Apply 1/2 drop of lubricant to the shaft ❺.

○ Do not hold on to the arm when pressing on the right loading gear ❸.

○ Clean the section of the right shuttle ass'y ❷ where the tape is attached.

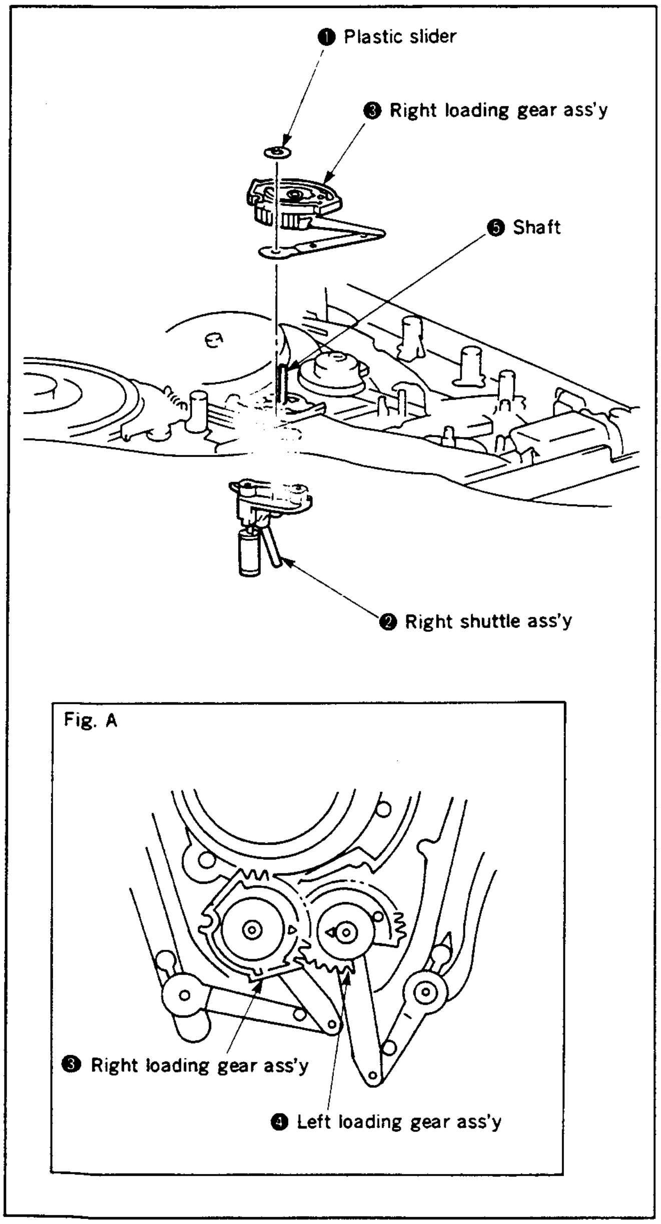

❶ Plastic slider
❸ Right loading gear ass'y
❺ Shaft
❷ Right shuttle ass'y
Fig. A
❸ Right loading gear ass'y
❹ Left loading gear ass'y

Fig. 3-40.

3-35. LEFT SHUTTLE ASS'Y, LEFT LOADING GEAR ASS'Y (Fig. 3-41)

1) Remove the right shuttle ass'y and right loading gear ass'y. (Refer to 3-34.)
2) Remove the plastic slider ❶, then pull out the left shuttle ass'y ❷.
3) Remove washer 2 ❸, then pull out the left loading gear ass'y ❹.

[Precautions on remounting]

○ Apply 1/2 drop of lubricant to shaft ❺.

○ The tension regulator arm ass'y ❻ and left shuttle ass'y ❷ must be positioned as shown in Fig. A below.

○ Do not hold on to the arm of the left loading gear ass'y ❹ when the left loading gear ass'y ❹ is pressed.

○ Clean the section of the felt shuttle ass'y ❷ where the tape is attached.

[Adjustments after replacement]

○ Perform tape path adjustments as described in 4-1.

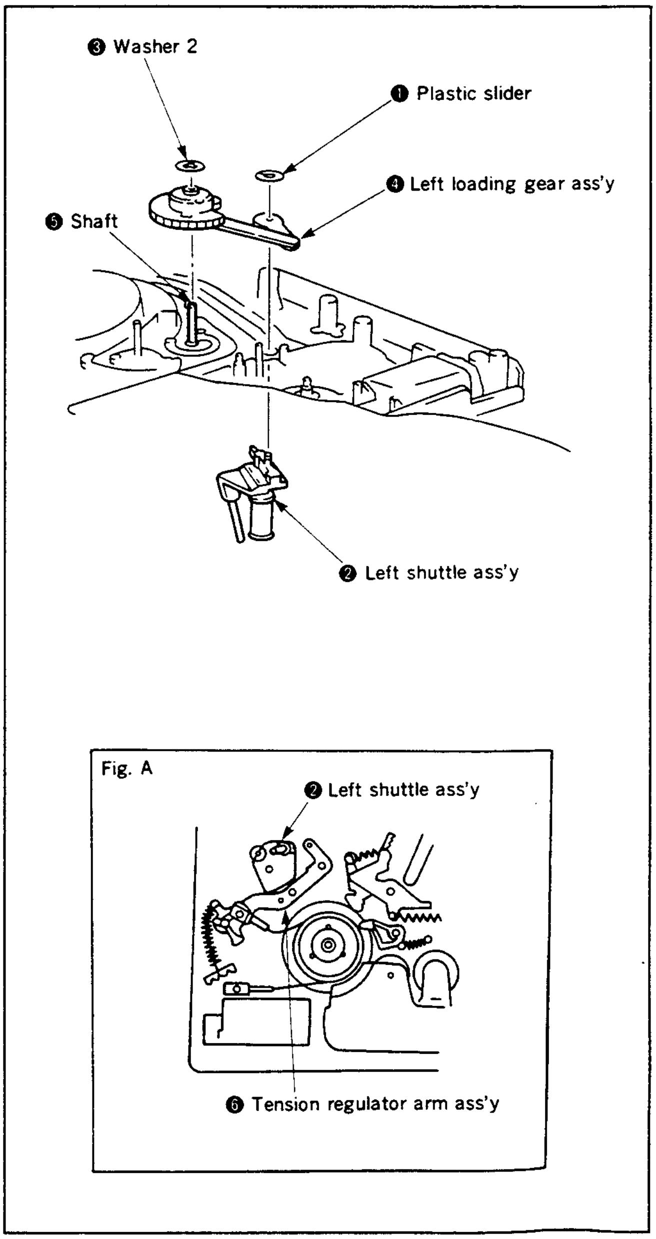

❸ Washer 2
❶ Plastic slider
❹ Left loading gear ass'y
❺ Shaft
❷ Left shuttle ass'y
Fig. A
❷ Left shuttle ass'y
❻ Tension regulator arm ass'y

Fig. 3-41.

4. ADJUSTMENT

4-1. TAPE PATH ADJUSTMENT

The "Tape path" refers to the route of the tape from the supply reel disk to the take-up reel disc via the video heads. Each component part of the tape transport system, particularly the surface of parts which make direct contact with the tape must always be kept clean, free of dust, oil, scratches and so forth.

The tape path system is factory preadjusted. when parts of the tape transport system are replaced, be sure to make the required adjustments as precisely as possible in order to ensure stable tape transport.

4-1-1. Tension regulator position/tension adjustment (Fig. 4-1.)

Purpose: Stabilizes contact of the video head and the tape to maintain the tension of the tape so that it feeds at a constant level.

- **Position adjustment**

Mode	Threading is completed without a cassette loaded. (Refer to section 1-2.)
Adjustment locations	Tension band holder

[Adjustment method]

1) Allow the unit to go through the threading procedure without a cassette loaded.
2) Set the VTR unit to playback, then turn the tension band adjuster lever so that the gap between guide No. 0 and tension arm is within 4.5±0.4mm. *(Set the unit to playback without a cassette loaded.)
3) After adjustment, go through the loading procedure once more without a cassette loaded, then check the position of the tension arm.

- **Tension adjustment**

Mode	Playback
Measuring instrument/tool	Torque cassette
Adjustment locations	Position for hooking the tension spring
Specification	28 to 34 g•cm

[Adjustment method]

1) Playback the torque cassette.
2) Check that the center value deviation reading on the torque cassette meets with the standards.
3) When the reading is higher than the standards: Move the spring toward direction Ⓐ.
   When the reading is less than the standards: Move the spring toward direction Ⓑ.

Note: Move the spring to the tension spring hook position and recheck the tension arm position. If the arm position is misaligned, adjust the position and tension of the tension arm.

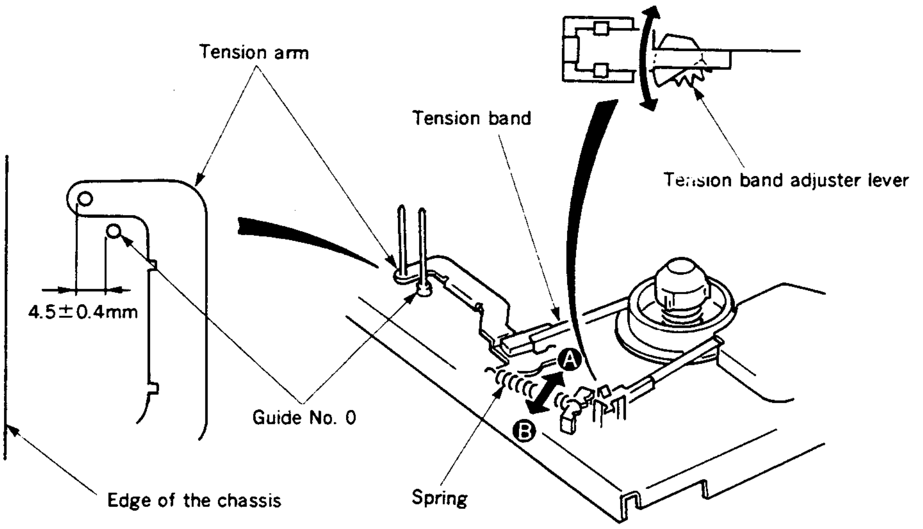


Fig. 4-1.

3-36. C-ROLLER ARM ASS'Y, C-ROLLER RELEASE LEVER (Fig. 3-42)

1) Disengage the claw ❶, then pull out the C-roller arm ass'y ❷.
2) Unhook the end of the spring ❸ from the chassis.
3) Disengage the two claws ❹, then pull out the C-roller release lever ❺.

[Precautions on remounting]

○ Mount C-roller arm ass'y ❷ so that the hole ❻ on the C-roller arm ass'y ❷ fits into the boss ❼ on the C-roller release lever ❺.

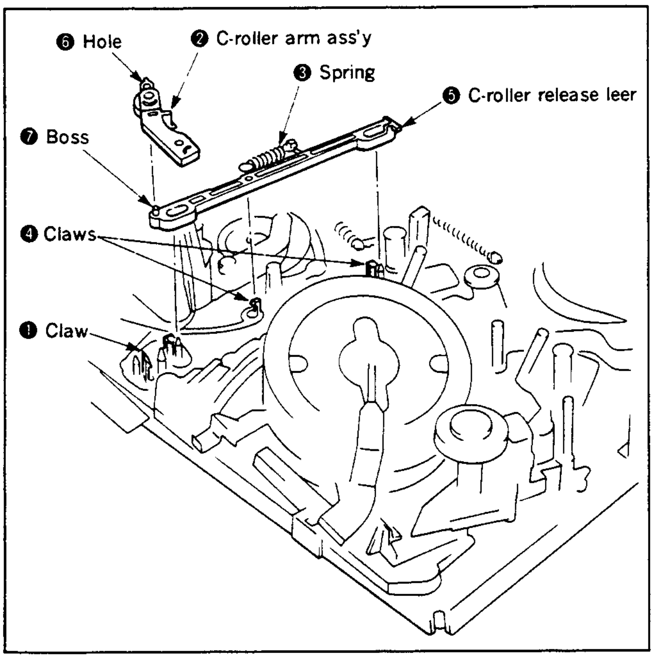

❻ Hole
❷ C-roller arm ass'y
❸ Spring
❺ C-roller release leer
❼ Boss
❹ Claws
❶ Claw

Fig. 3-42.

4-1-2. Height adjustment of the guide roller No. 2 (Fig. 4-2)

Mode	Playback
Tool	Blank tape
Adjustment locations	Guide roller height adjuster screw

[Adjustment method]

1) Load a new tape in the unit, then play it back.
2) Make sure that the lower flange of guide roller No. 2 does not curl up.
3) When the tape curls up: Turn the guide roller adjuster screw clockwise.
   When the tape does not fit into the lower flange: Turn the guide roller adjuster screw counter-clockwise.
4) After the above check, separate the tension arm from the tape, then re-attach it slowly. At this time, check if the tape curls up at the lower flange of the guide roller No. 2 and if the curl disappears within 2 seconds.
5) If curl does not disappear in two seconds: Turn the adjuster screw clockwise.
   If the tape does not curl up: Turn the adjuster screw counter-clockwise.

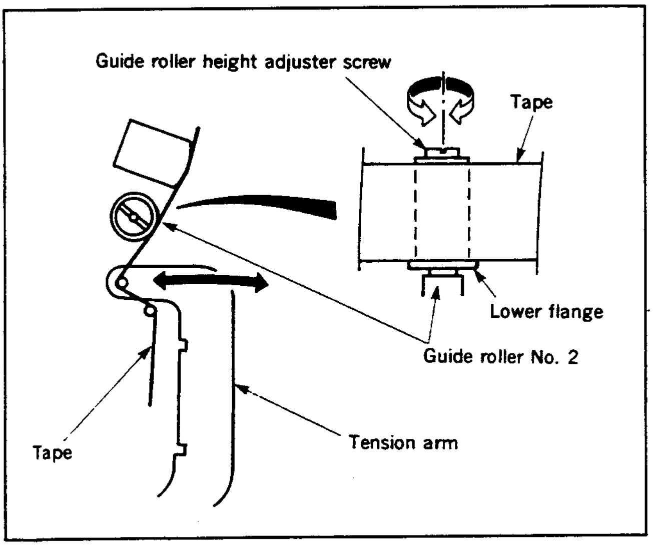


Fig. 4-2.

4-1-3. Height adjustment of guide roller No. 7 and the RVS arm (Fig. 4-3.)

Mode	Playback
Tool	Blank tape
Adjustment locations	Height adjuster nut

[Adjustment method]

1) Load the tape into the VTR and play it back, then adjust the height of the guide roller No. 7 so that the tape runs along the lower flange of guide roller No. 7.
2) If the guide roller is too low: Turn the height adjuster nut counter-clockwise.
   If the guide roller is too high: Turn the height adjuster nut clockwise.
3) Run the tape in REV, then adjust the height of the RVS arm so that the tape runs along guide roller No. 7.
4) If the tape gets caught in the upper flange of guide roller No. 7: Turn the RVS arm height adjuster nut clockwise.
5) If the tape catches on the lower flange of guide roller No. 7 : Turn the RVS arm height adjuster nut counter-clockwise.

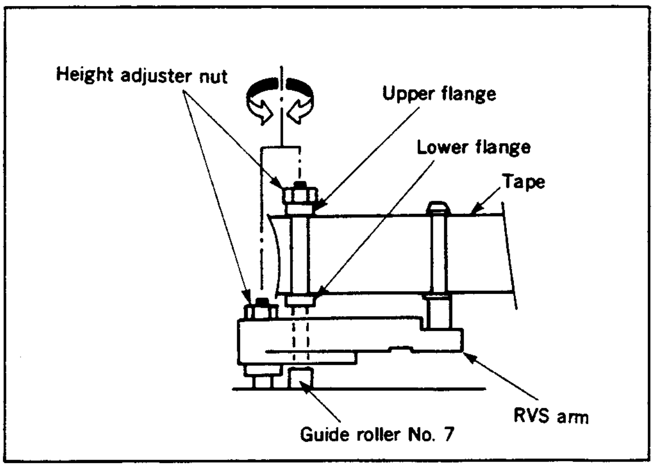


Fig. 4-3.

4-1-4. Height adjustment of guide rollers No. 3 and No. 6 (Fig. 4-4)

Mode	Playback
Signal	Hi-Fi alignment tape (Hi-Fi 400Hz)
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check.
Adjustment locations	Guide roller height adjuster screw.

[Adjustment method]

1) Tracking (playback): Turn off the auto tracking, then press the tracking buttons ▽ and △ simultaneously to set the tracking at the center position.
(If adjustment is made after the drum is replaced, the tracking must be set at the max. Rf output position.)
2) Height adjuster screw: Even out the RF output waveforms.
3) Press the tracking buttons (playback), ▽ and △ alternately.
4) Check that RF output drops the same amount at the front and rear edges.

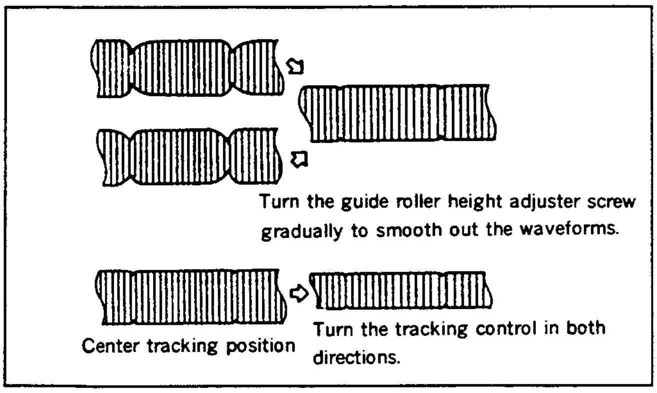

Turn the guide roller height adjuster screw gradually to smooth out the waveforms.
Center tracking position
Turn the tracking control in both directions.

Fig. 4-4.

4-1-5. ACE head ass'y adjustment (rough adjustment) (Figs. 4-5 and 4-6)

Purpose: Allows the tape to make even contact with the head for recording and playback of the specified track.

Mode	Playback
Tool	Blank tape
Adjustment locations	Height adjuster nut, tilt adjuster screw

[Adjustment method]

1) Mount the ACE head ass'y. At this time, adjust the height so that the height of guide flange No. 7 matches the level of the lower edge of the control head.
2) Remove the adjustment tool and load a new tape, then set the unit for playback.
3) Check that the tape does not curl or raise up noticeably near the ACE head.
4) If the yape curls up or rarises noticeably, readjust the tilt adjuster screw, the azimuth adjuster screw and the height adjuster nut.
(The height of the ACE head should be adjusted so that the lower edge of the tape is approx. 0.1 to 0.15 mm from the control head.)
5) Perform precision adjustment.

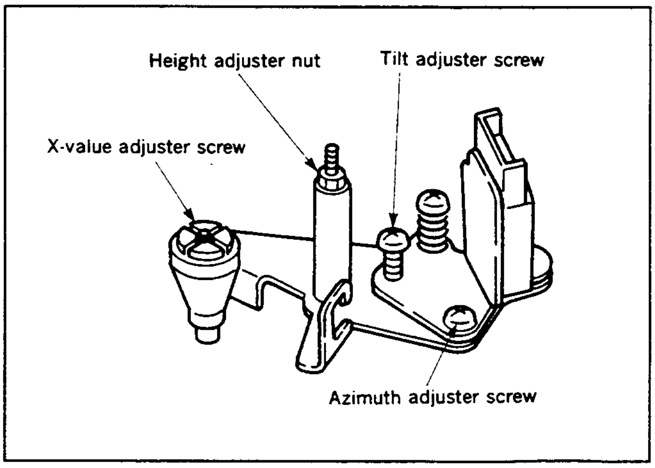

Height adjuster nut
Tilt adjuster screw
X-value adjuster screw
Azimuth adjuster screw

Fig. 4-5.

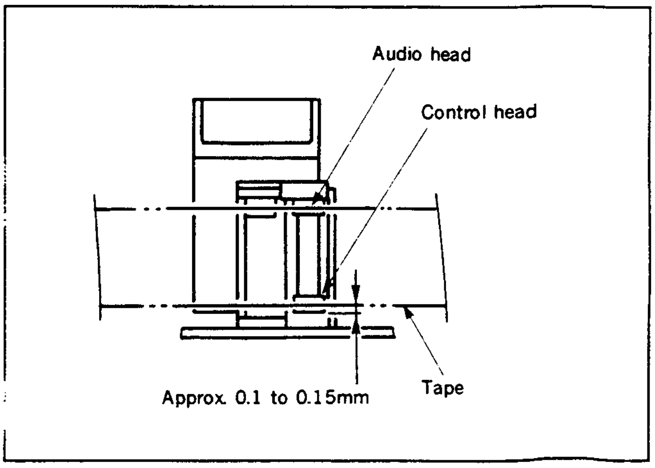

Audio head
Control head
Approx. 0.1 to 0.15mm
Tape

Fig. 4-6.

4-1-6. ACE head assembly adjustment (precision adjustment)

Mode	Playback
Signal	Alignment tape (JVC-MH-1 1KHz)
Measuring instrument	Oscilloscope
Measuring point	Audio output terminal
Adjustment locations	Azimuth adjuster screw Height adjuster nut Tilt adjuster screw

[Adjustment method]

1) Adjust the tilt adjuster screw in the FWD or REV mode so that the lower flange of guide No. 7 does not curl up or raise.
2) Alternately adjust the azimuth adjuster screw, the height adjuster nut, and the tilt adjuster screw to maintain even audio output at maximum with minimum deviation.

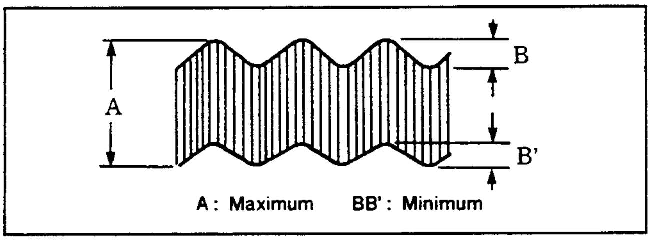

A
B
B'
A: Maximum BB': Minimum

Fig. 4-7.

4-1-7. X-value adjustment

Purpose : To obtain compatibility with other VTR.

Precaution : Be sure to perform the preset tracking adjustment before perform this adjustment. (Refer to the Service Guide.)
Turn off the auto tracking and set the VTR for manual tracking mode.

Mode	Playbadk
Signal	Hi-Fi alignment tape (Hi-Fi 400Hz), alignment tape (JVC-MH-1)
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check. (Check with the CHA head)
Adjustment locations	X-value adjuster screw

[Adjustment method]

- **Adjustment by Hi-Fi alignment tape**

  When the tracking is set at the center position (by pressing the ▽ and △ keys simultaneously), adjust the RF output to maximum.

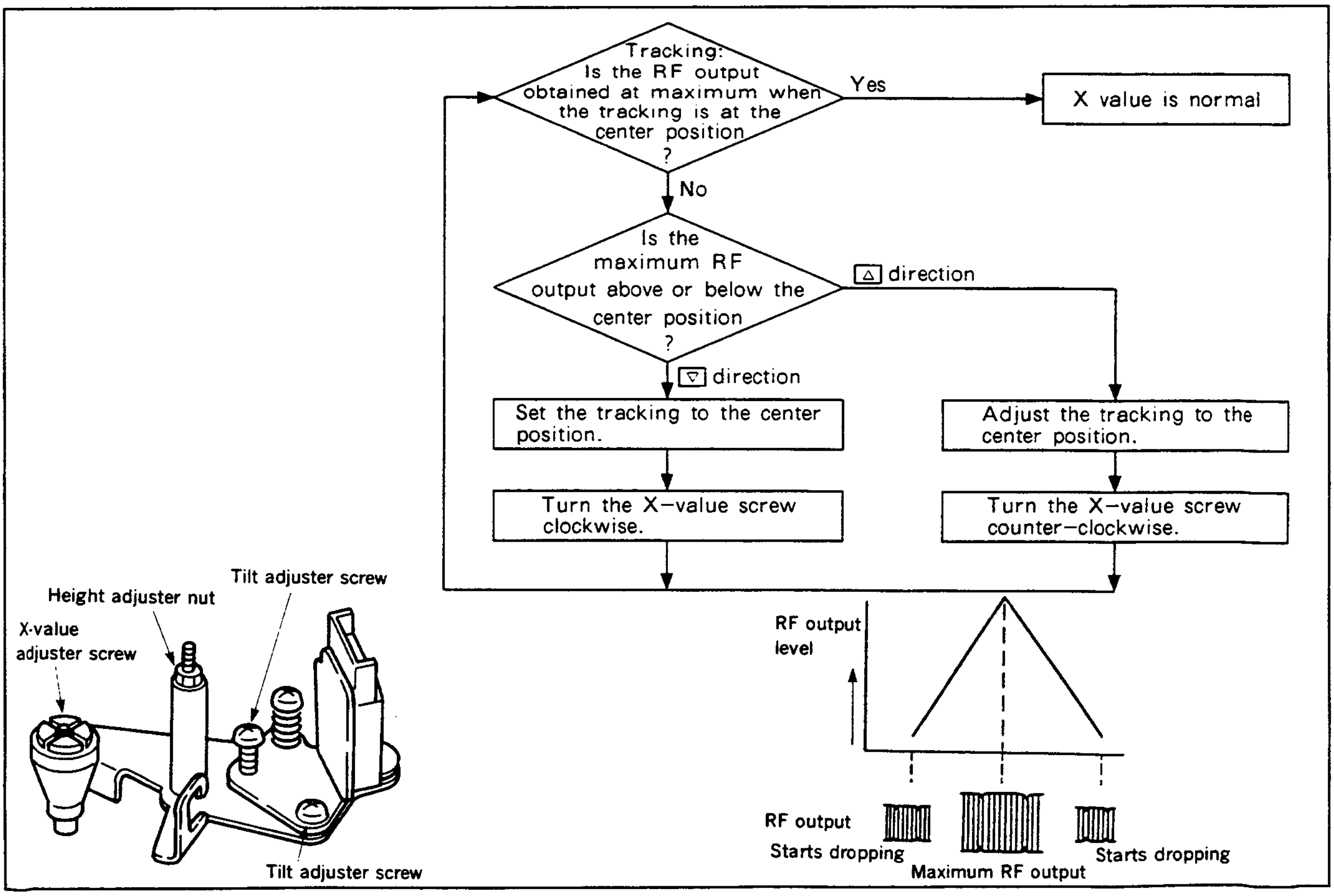

Tracking: Is the RF output obtained at maximum when the tracking is at the center position ?
Yes
X value is normal
No
Is the maximum RF output above or below the center position ?
△ direction
▽ direction
Set the tracking to the center position.
Turn the X-value screw clockwise.
Adjust the tracking to the center position.
Turn the X-value screw counter-clockwise.
Tilt adjuster screw
Height adjuster nut
X-value adjuster screw
Tilt adjuster screw
RF output level
RF output
Starts dropping
Maximum RF output
Starts dropping

Fig. 4-8.

- **Adjustment by Alignment tape (JVC-MH-1)**

Adjust the X-value adjuster screw so that maximum RF output is obtained and also that the RF output drops to the same position on pressing the respective ▽ and △ buttons while the tracking is set at the center position.

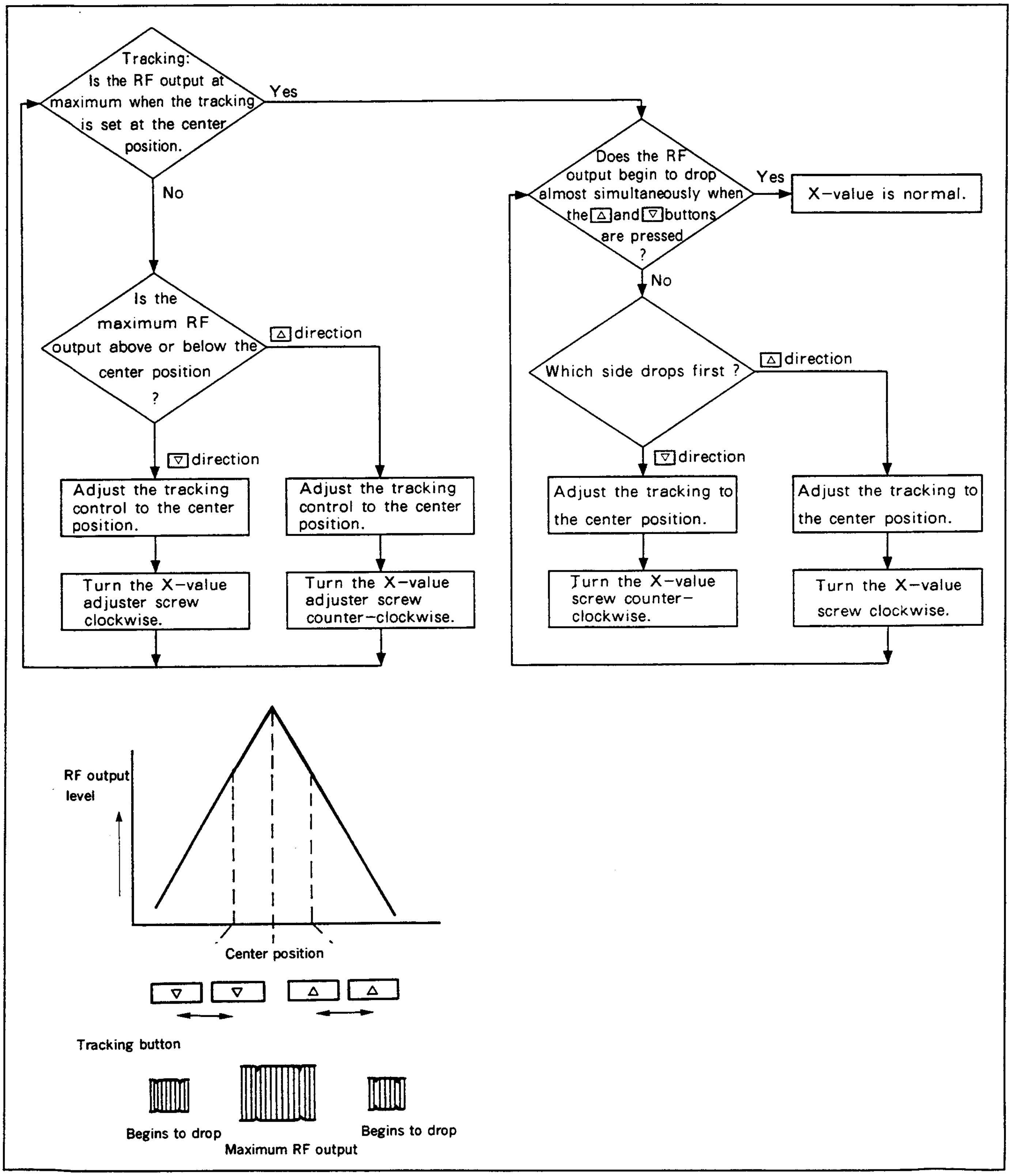

Tracking: Is the RF output at maximum when the tracking is set at the center position.
Yes
No
Is the maximum RF output above or below the center position ?
△ direction
▽ direction
Adjust the tracking control to the center position.
Turn the X-value adjuster screw clockwise.
Adjust the tracking control to the center position.
Turn the X-value adjuster screw counter-clockwise.
Does the RF output begin to drop almost simultaneously when the △ and ▽ buttons are pressed ?
Yes
X-value is normal.
No
Which side drops first ?
△ direction
▽ direction
Adjust the tracking to the center position.
Turn the X-value screw counter-clockwise.
Adjust the tracking to the center position.
Turn the X-value screw clockwise.
RF output level
Center position
▽
▽
△
△
Tracking button
Begins to drop
Maximum RF output
Begins to drop

Fig. 4-9.

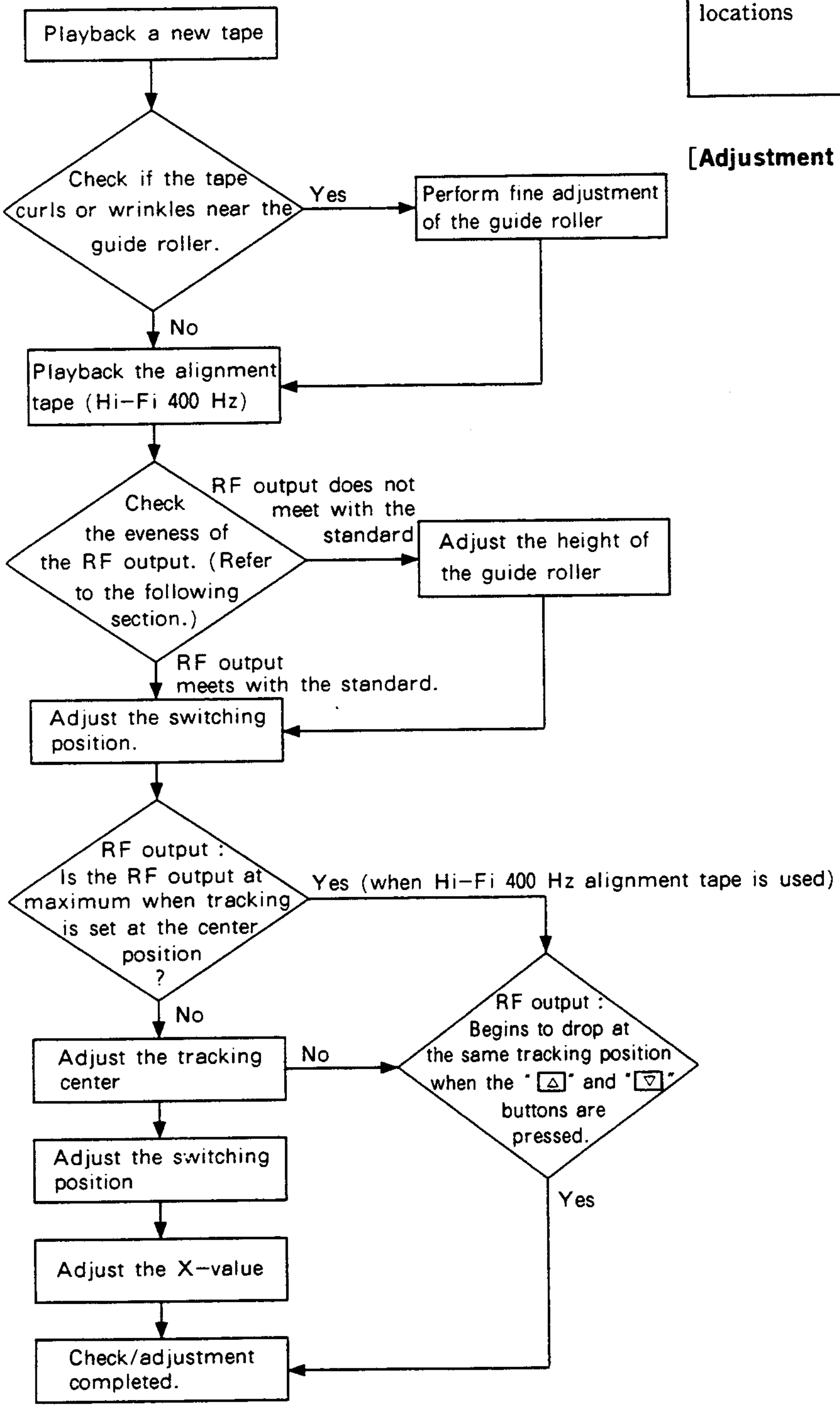
4-1-8. Adjustments after replacing the drum (video head)

Purpose : Co-relative height, X-value and other factors of the drum will deviate from those of the guide roller. If the drum is replaced properly, these deviations are extremely small.

Precaution : Turn off the auto tracking and set the manual tracking mode.

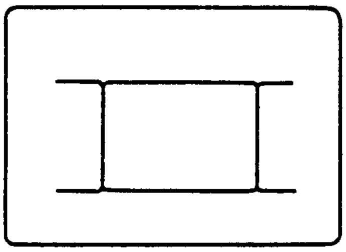
Mode	Playback
Signal	Alignment tape (JVC-MH-1), blank tape
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check.
Adjustment locations	Guide roller (refer to 4-1-5.) Switching position, Tracking preset, SP delay mono-multi, X-value (refer to 4-1-8) } (Refer to the Service Guide)

[Adjustment method]

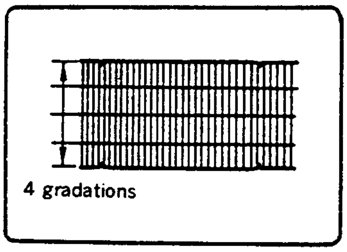

Playback a new tape
Check if the tape curls or wrinkles near the guide roller.
Yes
Perform fine adjustment of the guide roller
No
Playback the alignment tape (Hi-Fi 400 Hz)
Check the eveness of the RF output. (Refer to the following section.)
RF output does not meet with the standard
Adjust the height of the guide roller
RF output meets with the standard.
Adjust the switching position.
RF output : Is the RF output at maximum when tracking is set at the center position ?
Yes (when Hi-Fi 400 Hz alignment tape is used)
No
Adjust the tracking center
No
RF output : Begins to drop at the same tracking position when the "△" and "▽" buttons are pressed.
Yes
Adjust the switching position
Adjust the X-value
Check/adjustment completed.

[Checking the eveness and fluctuation of the RF output]

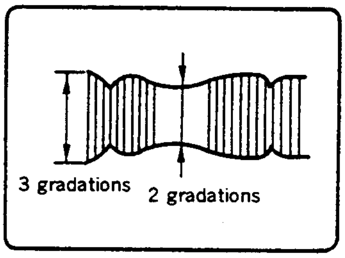
1) Set the RF output to the maximum level using the tracking buttons.



2) Perform fine adjustment of the voltage level range of the oscilloscope, then adjust the RF output deviation to within 4 gradations.



3) Press the tracking buttons and adjust the maximum amplitude of the RF output to within 3 gradations.
4) At this time, check if the minimum amplitude is more than 2 gradations.



5) Check that the RF output fluctuation between minimum and maximum levels is within 13%.

4-1-9. Checking the tension and torque

Purpose: To check that the tension, torque and compression force of the tape take-up section and mobile sections to ensure smooth tape run and achieve standard VTR performance.

If the tape transport is not smooth or problems occur in relation to the tape transport speed, perform the following check.

Mode	Each operation mode without loading a cassette tape. (Refer to section 1-3.)
Measuring instrument	Torque gauge, Torque gauge adapter

Item	VTR operation mode	Reel to be measured	Measurement value
Main brake torque	Stop	Supply and take-up reels	170g•cm or more
Review torque	Review	Supply reel	180±30g•cm (using the torque cassette)
Take-up torque	Playback	Take-up reel	80 to 140g•cm (using torque cassette)
Back tension torque	Rewind	Take-up reel	4 to 25 g•cm

[Check method]

Measure the torque using the torque gauge and torque gauge adaptor with the torque gauge fixed.

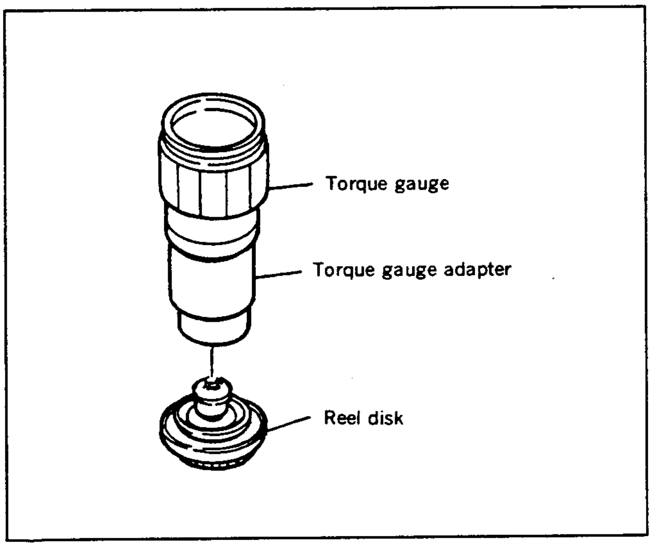


Fig. 4-13.

SLV-E80AP/B/IT/NC/NP/UX/UY/VP
RMT-V141A/V142A/V146A/V146D

SONY
SERVICE MANUAL

AEP Model
SLV-E80AP
French Model
SLV-E80B
Italian Model
SLV-E80IT
North European Model
SLV-E80NC
Spanish Model
SLV-E80NP
UK Model
SLV-E80UX/UY
German Model
SLV-E80VP

SUPPLEMENT-1

Please correct your service manual.

- **SLV-E80VP: MESECAM model informations**
- **Corrections**

MESECAM model has been added to the SLV-E80VP model in the midst of production.

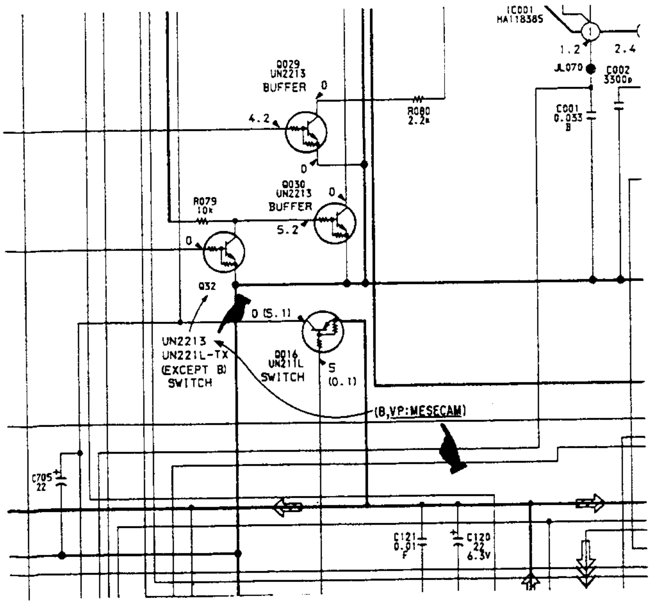
☛ **: Added or corrected position.**

1. SLV-E80VP: MESECAM MODEL INFORMATIONS

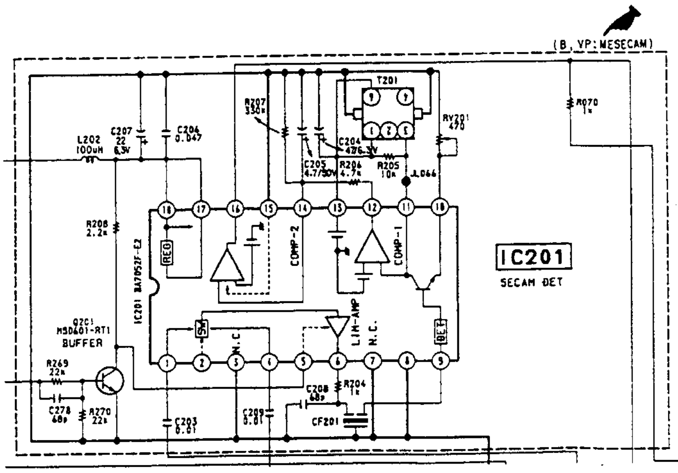
1-1. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

Page 4-8

- **Location: K-9 to L-10**

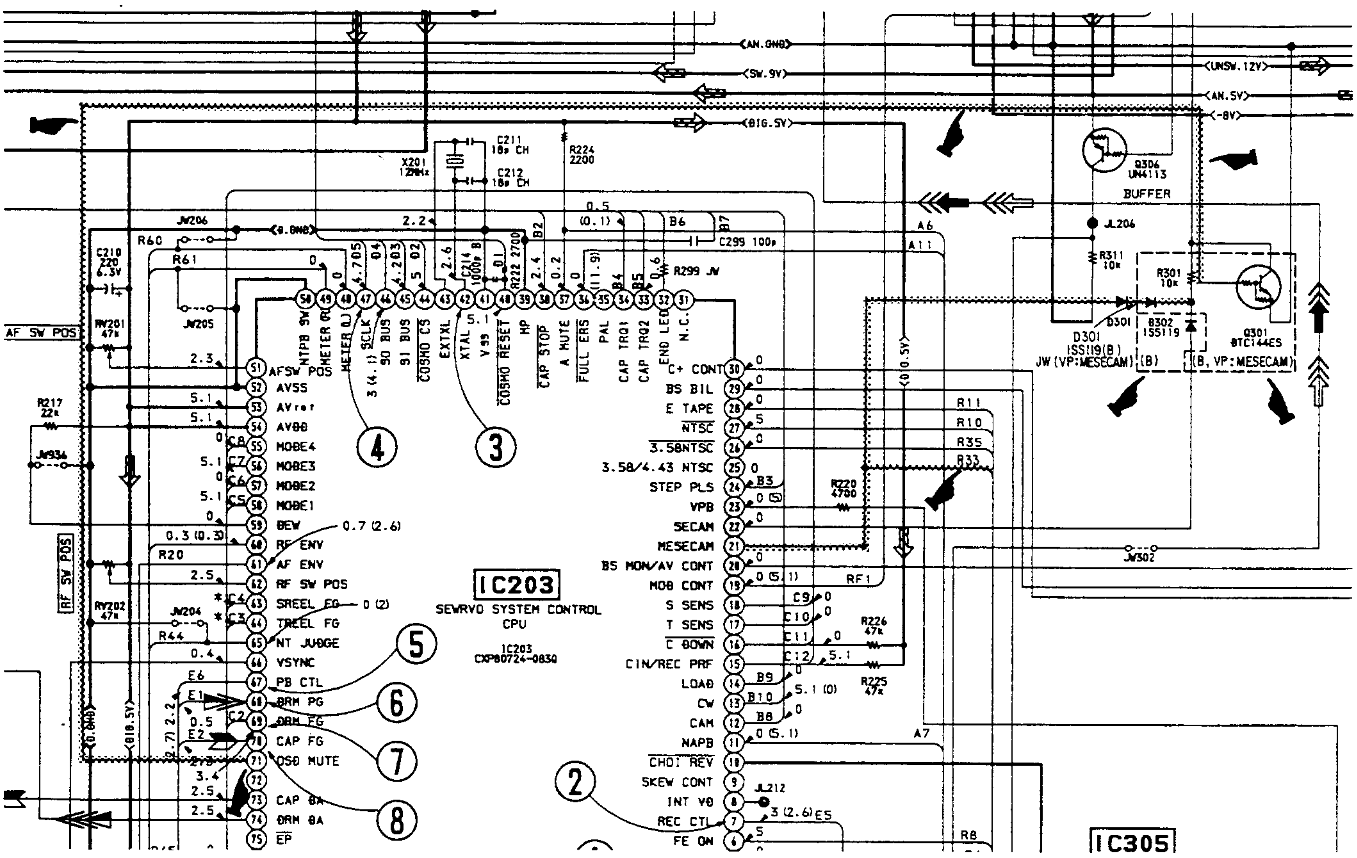

IC001
HA118385
1.2
2.4
JL070
C002
3300p
C001
0.033
B
Q029
UN2213
BUFFER
0
4.2
R080
2.2k
0
Q030
UN2213
BUFFER
0
R079
10k
5.2
0
Q32
0 (5.1)
UN2213
UN221L-TX
(EXCEPT B)
SWITCH
Q016
UN211L
SWITCH
5
(0.1)
(B,VP:MESECAM)
C705
22
C121
0.01
F
C120
22
6.3V

- **Location: C-13 to D-16**


(B, VP:MESECAM)
T201
R207
330k
RV201
470
R070
1k
L202
100uH
C207
22
6.3V
C206
0.047
C204
47/6.3V
C205
4.7/50V
R206
4.7k
R205
10k
JL066
R208
2.2k
REG
COMP-2
COMP-1
IC201 BA7052F-E2
IC201
SECAM DET
Q201
MSD601-RT1
BUFFER
SW
N.C
LIM-AMP
N.C.
DET
R269
22k
C278
68p
R270
22k
C203
0.01
C209
0.01
C208
68p
R204
1k
CF201

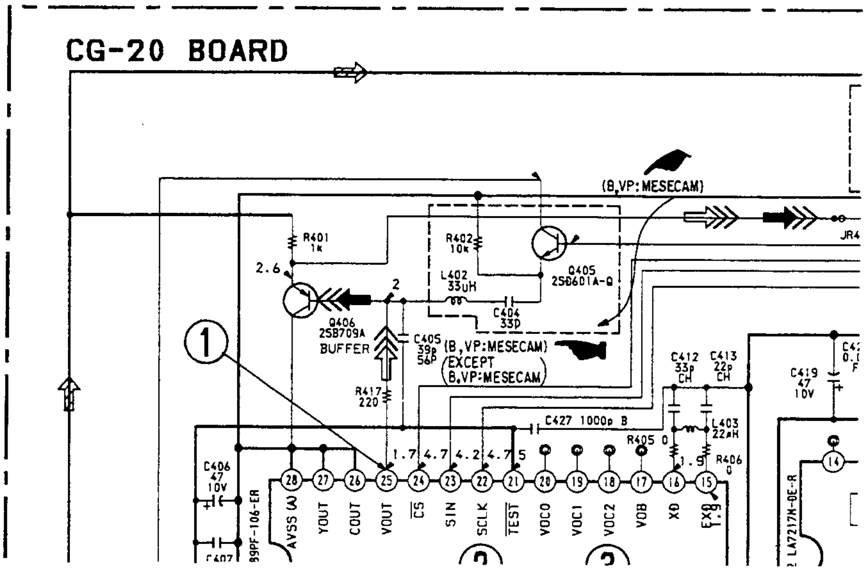
Page 4-17, 18

- **Location: C-20 to E-25**


IC203
SERVO SYSTEM CONTROL
CPU
IC203
CXP80724-083Q
AFSW POS
AVSS
AVref
AVDD
MODE4
MODE3
MODE2
MODE1
DEW
RF ENV
AF ENV
RF SW POS
SREEL FG
TREEL FG
NT JUDGE
VSYNC
PB CTL
DRM PG
DRM FG
CAP FG
OSD MUTE
CAP BA
DRM BA
EP
NTPB SW
METER R
METER L
SCLK
SO BUS
SI BUS
COSMO CS
EXTAL
XTAL
VSS
COSMO RESET
HP
CAP STOP
A MUTE
FULL ERS
PAL
CAP TRQ1
CAP TRQ2
END LED
N.C.
C+ CONT
BS BIL
E TAPE
NTSC
3.58NTSC
3.58/4.43 NTSC
STEP PLS
VPB
SECAM
MESECAM
BS MON/AV CONT
MOD CONT
S SENS
T SENS
C DOWN
CIN/REC PRF
LOAD
CW
CAM
NAPB
CHDI REV
SKEW CONT
INT VD
REC CTL
FE ON
X201 12MHz
C211 18p CH
C212 18p CH
R224 2200
C299 100p
R299 JW
Q306 UN4113
BUFFER
R311 10k
R301 10k
D301 1SS119(B) JW (VP:MESECAM)
D302 1SS119
Q301 DTC144ES
(B)
(B, VP:MESECAM)
IC305
AF SW POS
RF SW POS
④
③
⑤
⑥
⑦
⑧
②

Page 4-45

- **Location: B-3**


CG-20 BOARD
(B,VP:MESECAM)
R401 1k
R402 10k
L402 33uH
Q405 2SD601A-Q
C404 33P
Q406 2SB709A BUFFER
C405 39p 56P
(B,VP:MESECAM)
(EXCEPT B,VP:MESECAM)
R417 220
C406 47 10V
C427 1000p B
C412 33p CH
C413 22p CH
C419 47 10V
L403 22uH
R405 0
R406 0
AVSS (A)
YOUT
COUT
VOUT
CS
SIN
SCLK
TEST
VOCO
VOC1
VOC2
VOB
XO
EXO
①
JR4

1-2. EXPLDED VIEWS

_____indicates the added portion.

Page	Ref. No.	Part No.	Description
5-2	51	* A-6782-276-A	MA-181 BOARD, COMPLETE (E80AP, JT, NC, VP, VP:MESECAM)
	59	* A-6754-660-A	CG-20 BOARD, COMPLETE (E80B, VP:MESECAM)

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

1-3. ELECTRICAL PARTS LIST

_____ indicates the added portion.

Page	Ref. No.	Part No.	Description
5-7		* A-6754-660-A	CG-20 BOARD, COMPLETE (E80B, VP:MESECAM)
	L402	1-408-976-21	INDUCTOR 33μH (E80B, VP:MESECAM)
	Q405	8-729-422-27	TRANSISTOR 2SD601A-Q (E80B, VP:MESECAM)
	R402	1-216-222-00	METAL GLAZE 10μ 5% 1/8W (E80B, VP:MESECAM)
5-11		* A-6782-276-A	MA-181 BOARD, COMPLETE (E80AP, IT, NC, VP, VP:MESECAM)
5-13	Q301	8-729-900-89	TRANSISTOR DTC144ES (E80B, VP:MESECAM)
5-21		* A-6727-545-A	RV-33 BOARD, COMPLETE (EXCEPT E80B)
5-22	C203	1-163-031-11	CERAMIC CHIP 0.01μF 50V (E80B, VP:MESECAM)
	C204	1-126-154-11	ELECT 47μF 20% 6.3V (E80B, VP:MESECAM)
	C205	1-126-163-11	ELECT 4.7μF 20% 50V (E80B, VP:MESECAM)
	C206	1-163-035-00	CERAMIC CHIP 0.047μF 50V (E80B, VP:MESECAM)
	C207	1-124-638-11	ELECT 22μF 20% 12V (E80B, VP:MESECAM)
	C208	1-163-113-00	CERAMIC CHIP 68PF 5% 50V (E80B, VP:MESECAM)
	C209	1-163-031-11	CERAMIC CHIP 0.01μF 50V (E80B, VP:MESECAM)
	C278	1-163-113-00	CERAMIC CHIP 68PF 5% 50V (E80B, VP:MESECAM)
	CF201	1-527-943-00	FILTER, CERAMIC (E80B, VP:MESECAM)
	IC201	8-759-199-28	IC BA7025F-E2 (E80B, VP:MESECAM)
5-23	L202	1-408-982-11	INDUCTOR 100μH (E80B, VP:MESECAM)
	Q032	8-729-421-19	TRANSISTOR UN2213 (E80B, VP:MESECAM)
	Q201	8-729-010-25	TRANSISTOR MSD601-RT1 (E80B, VP:MESECAM)
5-24	R070	1-216-049-00	METAL CHIP 1k 5% 1/10W (E80B, VP:MESECAM)
	R204	1-216-049-00	METAL CHIP 1k 5% 1/10W (E80B, VP:MESECAM)
	R205	1-216-073-00	METAL CHIP 10k 5% 1/10W (E80B, VP:MESECAM)
	R206	1-216-065-00	METAL CHIP 4.7k 5% 1/10W (E80B, VP:MESECAM)
	R207	1-216-109-00	METAL CHIP 330k 5% 1/10W (E80B, VP:MESECAM)
	R208	1-216-057-00	METAL CHIP 2.2k 5% 1/10W (E80B, VP:MESECAM)
	R269	1-216-081-00	METAL CHIP 22k 5% 1/10W (E80B, VP:MESECAM)
	R270	1-216-081-00	METAL CHIP 22k 5% 1/10W (E80B, VP:MESECAM)
5-25	RV201	1-238-852-11	RES. ADJ, CERMET 470 (E80B, VP:MESECAM)
	T201	1-409-467-11	COIL (TRAP 7.8k) (E80B, VP:MESECAM)

1-4. ADJUSTMENT

Page 7-5

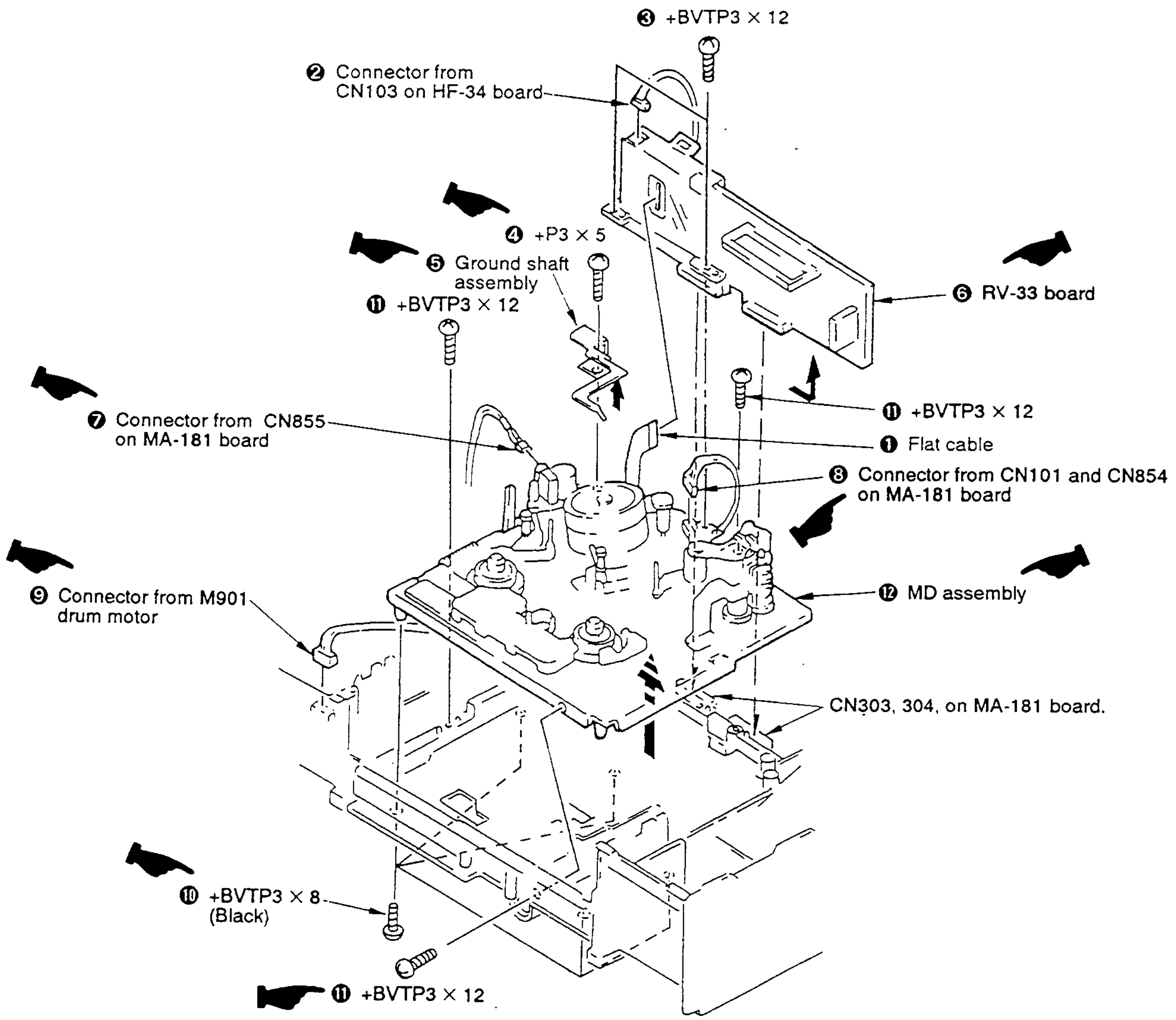
2-3-8. SECAM Discrimination Adjustment
(RV-33 Board) (SLV-E80B, VP: MESECAM)

2. CORRECTIONS

2-1. DISASSEMBLY

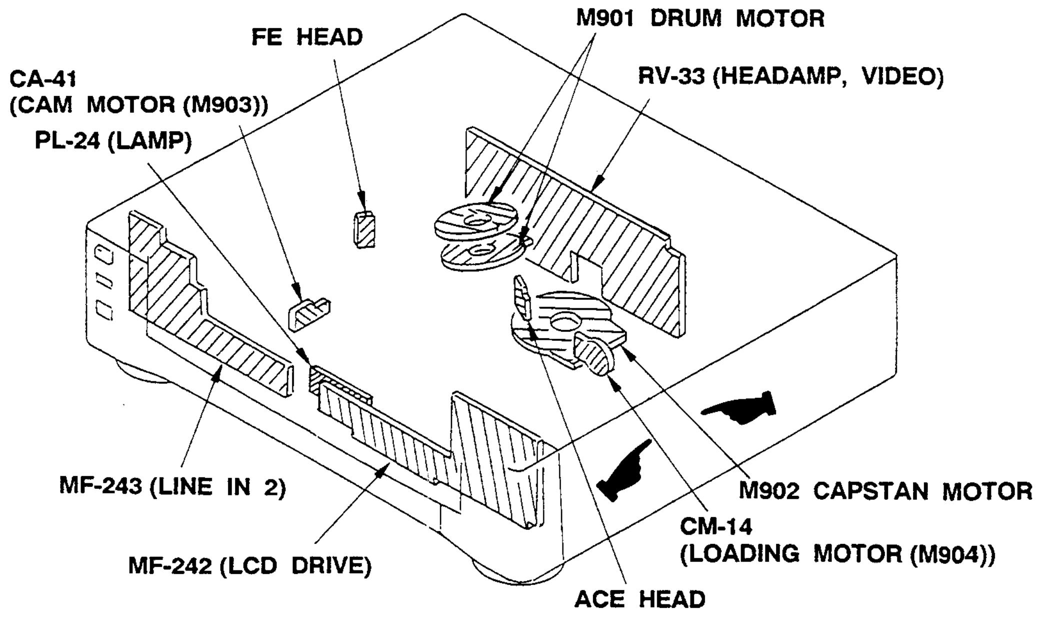
Page 2-3

2-6. RV-33 BOARD AND MD ASSEMBLY


❸ +BVTP3 × 12
❷ Connector from CN103 on HF-34 board
❹ +P3 × 5
❺ Ground shaft assembly
⓫ +BVTP3 × 12
❻ RV-33 board
❼ Connector from CN855 on MA-181 board
⓫ +BVTP3 × 12
❶ Flat cable
❽ Connector from CN101 and CN854 on MA-181 board
❾ Connector from M901 drum motor
⓬ MD assembly
CN303, 304, on MA-181 board.
❿ +BVTP3 × 8 (Black)
⓫ +BVTP3 × 12

Page 2-7, 4-6, 4-11, 4-30

2-11. CIRCUIT BOARDS LOCATION


FE HEAD
M901 DRUM MOTOR
CA-41 (CAM MOTOR (M903))
RV-33 (HEADAMP, VIDEO)
PL-24 (LAMP)
MF-243 (LINE IN 2)
M902 CAPSTAN MOTOR
CM-14 (LOADING MOTOR (M904))
MF-242 (LCD DRIVE)
ACE HEAD

2-2. EXOLODED VIEWS

Correction

Page	Ref. No.	Description	Part No.	
			Incorrect	Correct
5-1	37	COVER, SLIDE (E80NC, NP)	3-708-813-21	3-708-816-21
	37	COVER, SLIDE (E80AP, IT, VP)	3-708-813-31	3-708-816-31
	37	COVER, SLIDE (E80B)	3-708-813-41	3-708-816-41
5-4	208	TABLE ASSY, REEL	X-3727-789-1	X-3727-798-1

2-3. ADJUSTMENTS

Page 7-1

2-1-1. Instruments to be Used

1) Color TV
2) Oscilloscope 1 or 2 phenomena, band more than 30 MHz, delay mode, as provided.
3) Frequency counter (min. 8 digits)
4) PAL, SECAM pattern generator

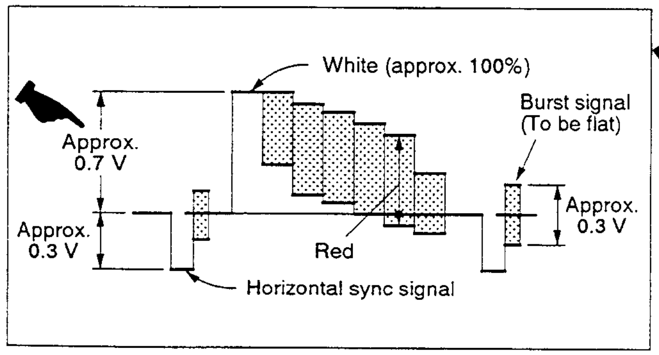

White (approx. 100%)
Burst signal (To be flat)
Approx. 0.7 V
Approx. 0.3 V
Approx. 0.3 V
Red
Horizontal sync signal

Fig. 7-2-2.

Page 7-3

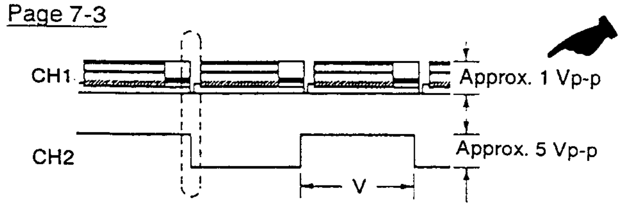

CH1
Approx. 1 Vp-p
CH2
Approx. 5 Vp-p
V

Fig. 7-2-4.

Page 7-4

Adjusting Method:

1) Set to E-E mode in the no signal condition.
2) Connect frequency counter to emitter of Q034, and adjust with RV006 so that the reading on frequency counter goes 3.80 ± 0.05 MHz.
3) Feed the color bar signal and record it.
4) Playback the recorded signal and check the signal at VIDEO LINE OUT goes 1.00 ± 0.02 Vp-p with oscilloscope.

Page 7-3

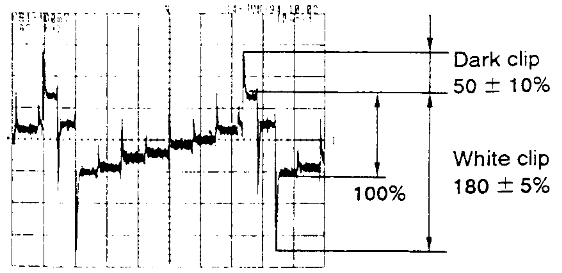
2-3-3. White Clip Adjustment (RV-33 Board)

Purpose:

Adjust the frequency of FM modulated YFM signal doesn't go too high.

When it is out of order, white goes flat and black is over-modulated.

Model	E-E
Signal	Color bar
Measurement Point	Pin ㊺ of IC001
Measuring Instrument	Oscilloscope
Adjusting Element	RV004
Specified Value	White clip :180 ± 5% Dark clip :50 ± 10%



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